

REGIONAL RESOURCE STEWARDSHIP COUNCIL MEETING

OCTOBER 11, 2007

VOLUME I OF II

LOCATION:

TENNESSEE VALLEY AUTHORITY
400 WEST SUMMIT HILL DRIVE
KNOXVILLE, TENNESSEE 37902

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1 P R O C E E D I N G S

2 MR. LITTLEPAGE: I want to welcome
3 everybody here this morning. My name is Tom
4 Littlepage, and I am the -- been asked to serve as
5 the Chairman of the Council. I just want to welcome
6 everybody here, and I'm glad that you were able to
7 make it.

8 There's been a number of changes on
9 the Council since the last time we met.
10 Unfortunately, there's some folks that were not able
11 to make this first meeting.

12 I wanted to let everybody know that
13 Jim Fyke, Joe Satterfield, and Mike Butler, who have
14 been active members of the panel, are not going to be
15 able to be with us today.

16 Tom Vorholt is going to be here but I
17 guess around noon. So he will be coming in later
18 today.

19 Bill Tittle is recovering from open

20 heart surgery. If any of you know Bill from
21 Chattanooga, he works in emergency management, and we
22 do wish him the best.

23 Also, Don Gowan, who has been a member
24 of this panel, was nominated -- renominated to serve
25 and is unable to for health reasons. So we're
1 waiting on the State of Virginia to provide an 5
2 alternate for him, and we wish him well as well.

3 There's also been a number of TVA
4 staff changes since we last met. One of the most
5 notable is to my right, Peyton Hairston is now our
6 Designated Federal Officer, and we welcome him.

7 Also, Barry Walton, who has served as
8 the Council -- advisor to the Council or General
9 Counsel to the Council, I guess I am getting tongue
10 tied here, as advisor to our group, let's say it that
11 way, and he retired not too long ago and Rebecca
12 Tolene is going to take his place as our new advisor.
13 We welcome her on board.

14 In addition to that, Bridgette is now
15 providing a lot of support in terms of environmental
16 stewardship issues to the Council, and I wanted to
17 thank her and her staff for all the preparations
18 involved in bringing this meeting together because we
19 certainly could not have done that without her.

20 Most of y'all have been here before
21 and know things like the restrooms, the snack bar,
22 and those kind of things that are just out the door
23 and down the hall.

24 Also, I would ask that if you have got
25 cell phones or personal digital devices, put those on
1 mute as a courtesy to our speakers. 6

2 Again, I wanted to thank you for
3 coming here. I do want the recognize Bruce. Bruce
4 has been the past Chairman of this group for a number
5 of years and has served with notable distinction. I
6 want to thank him for his efforts and just appreciate
7 the time and energy he put into this position.

8 The last thing I will say is obviously
9 we're here for a purpose, and there's a tab marked
10 "Panel Discussions" towards the back of your book.
11 Please refer to that in terms of the questions that
12 we will be going over tomorrow.

13 I would encourage you to look at those
14 questions with regards to the presentations and
15 information to help facilitate what I hope will be a
16 very good discussion tomorrow during the day.

17 I guess with that what I would like to
18 do is just go around the room and let -- most of us
19 know each other, but let's just introduce everybody
20 that's here in the room. We will start with Bruce
21 and just kind of go around the table. If you would,
22 just give your name, your background, a very brief
23 background, and then what emphasis or stakeholder
24 groups are you representing.

25 MR. BRUCE SHUPP: Bruce Shupp from
1 Guntersville, Alabama, a retired fishermen biologist
2 representing recreational fishermen.

3 MR. GEORGE KITCHENS: I am George
4 Kitchens from Decatur, Alabama. I am a CEO at one of
5 TVA's distributors in North Alabama, Joe Wheeler
6 Electric Membership Corporation.

7 MR. RUSSELL TOWNSEND: I'm Russ

8 Townsend. I'm the Tribal Historic Preservation
9 Officer for the Eastern Band of Cherokee Indians.
10 I'm an archeologist and historic preservationist, and
11 I am representing 18 federally recognized tribes and
12 folks concerned with the history of the Tennessee
13 River Valley.

14 MR. KENNETH DARNELL: I am Kenny
15 Darnell from Murray, Kentucky. I am the President of
16 the Murray-Calloway County Chamber of Commerce and a
17 representative of Governor Ernie Fletcher of the
18 Commonwealth of Kentucky.

19 MR. MICHAEL GOODMAN: I'm Mike Goodman
20 with Temple-Inland. I'm an environmental manager.
21 I'm from Waverly, Tennessee, and I'm representing the
22 direct-serve customers.

23 MR. KARL DUDLEY: I'm Karl Dudley with
24 Pickwick Electric Co-op in Selmer, Tennessee. I'm
25 the President and CEO. We serve parts of six
1 counties in Southwest Tennessee, including the 8
2 beautiful Pickwick Lake and Tennessee River area.
3 This is my 38th year partnering with TVA delivering
4 services to the people of our area, and I can tell
5 you this is the best TVA has ever been.

6 MR. JEFFREY DURNIK: I'm Jeff
7 Durniak, Regional Fisheries Supervisor for the
8 Georgia Wildlife Resources Division out of
9 Gainesville, Georgia. And I represent the state
10 agency perspective as well tributary reservoir users.
11 It's nice to be here again.

12 MR. BILL FORSYTH: I'm Bill Forsyth,
13 retired from banking and economic development. I'm
14 Chairman of Murphy Electric Power Board, but I am

15 here as the North Carolina representative appointed
16 by the Governor.

17 MR. WES ROSENBALM: Wes Rosenbalm from
18 Bristol, Virginia. I am CEO of Bristol Virginia
19 utilities, soon to be a TVA distributor here
20 representing the distributors.

21 MR. W. C. NELSON, JR.: I'm W. C.
22 Nelson from Blairsville, Georgia. I represent the
23 State of Georgia, and I am the Chairman of the
24 Development Authority of Union County.

25 SENATOR ARTHUR ORR: I'm Arthur Orr
1 from the Alabama State Senate and Governor Riley's ⁹ of
2 Alabama appointee, and my district covers the lower
3 section the wheeler Lake area of the Tennessee River.

4 MRS. JEAN ELMORE: Jean Elmore from
5 Tupelo, Mississippi. I am Haley Barbour's appointee
6 for the State of Mississippi.

7 MR. GLEN BIBBINS: I'm Glen Bibbins.
8 I'm from Dandridge, and I represent tributary lake
9 users. I served on the Reservoir Operations Study
10 with Dr. Durniak over there.

11 DFO MR. PEYTON HAIRSTON: And I'm
12 Peyton Hairston. As Tom pointed out, I am the
13 Designated Federal Officer. My day job is senior
14 vice present of Corporate Responsibility and
15 Diversity, and when we've got a half hour I will tell
16 you what that entails.

17 COUNCIL CHAIR MR. TOM LITTLEPAGE: And
18 again, I am Tom Littlepage. I work for the State of
19 Alabama in the Office of Water Resources. I'm kind
20 of like Jeff representing some state agency

21 perspectives as well as some water supply issues
22 within TVA.

23 FACILITATOR MR. DAVE WAHUS: I'm Dave
24 wahus, and I will be your facilitator for the session
25 today and tomorrow.

1 And this is Kim Nixon to my left, and¹⁰
2 she's writing -- taking down everything that you say.

3 COUNCIL CHAIR MR. TOM LITTLEPAGE: Do
4 you want to go ahead and just briefly introduce some
5 of the folks that are in the room, TVA staff?

6 MR. GREG SIGNER: I'm Greg Signer.
7 I'm the new Assistant General Counsel for the
8 Environment replacing Barry Walton. As you know,
9 Barry has been staffing this group. Rebecca Tolene
10 is going to take over for him and do that in the
11 future.

12 MS. REBECCA TOLENE: We have covered
13 that I am Rebecca Tolene. I serve in the General
14 Counsel's Office. I am going to be the attorney
15 liaison with this Council and try to step in to
16 Barry's shoes, which I can't imagine trying to do.
17 So be patient with me.

18 MS. KELLY LOVE: I'm Kelly Love. I'm
19 also an attorney in the General Counsel's Office.

20 MS. BUFF CROSBY: I'm Buff Crosby.
21 I'm the Senior Manager for Environmental Stewardship
22 with TVA. I am responsible for the land and water
23 stewardship functions of TVA.

24 MR. GENE GIBSON: My name is Gene
25 Gibson. I'm kind of doing double duty today between
1 the manager of water supply and also the manager of¹¹
2 the Bear Creek Project. So I will be speaking to you

3 later today on TVA's Drought Management Plan, as well
4 as the status of the Bear Creek Rehabilitation
5 Project.

6 MR. WAYNE POPPE: Wayne Poppe. I'm
7 the Senior Manager of the River Operations
8 representing Janet Herrin, who is the Senior Vice
9 President of River Operations.

10 MR. JIM ALLEN: I'm Jim Allen, Media
11 Relations, TVA.

12 MR. BRIAN ATKINS: Brian Adkins. I'm
13 with the Alabama Office of Water Resources in
14 Montgomery, Alabama.

15 MS. JENNIFER CONNER: Jennifer Conner,
16 watershed Operations.

17 MS. VICKIE ELLIS: Vickie Ellis,
18 Environmental Stewardship and Policy.

19 MS. BRIDGETTE ELLIS: And I'm
20 Bridgette Ellis. I'm Senior Vice President for the
21 Office of Environment and Research.

22 MS. ANDA RAY: I'm Anda Ray. I'm the
23 new Vice President of Environmental Stewardship and
24 Policy.

25 MR. CHUCK BACH: I'm Chuck Bach. I'm¹²
1 the Senior Manager of River Scheduling, and I will be
2 talking about the operation of the river and the dry
3 conditions later.

4 COUNCIL CHAIR MR. TOM LITTLEPAGE: I
5 think that's everybody. Thank y'all for
6 participating with this. Now, we will -- I guess
7 Peyton is next on the agenda.

8 I'm sorry. You're on there. You're

9 next.

10 FACILITATOR MR. DAVE WAHUS: I would
11 like to just review the agenda for you and then give
12 you a couple of quick administrative things.

13 We will be hearing from Peyton
14 Hairston here in a few moments and then we'll go on
15 to TVA updates.

16 Following the break, and we would ask
17 that we mind the clock when we break so that we can
18 stay on schedule, we will have a -- Chuck will talk
19 about the -- Chuck Bach will talk about the dry
20 conditions, and then Gene Gibson will talk about TVA
21 Drought Management Plan.

22 Lunch, an hour for lunch, and we will
23 be in room 407. Those of you who went through
24 training yesterday, I believe that's where you did
25 your training, it's either through that door there
1 that you can go or you can go around by the elevators¹³
2 and it's -- but for those of you that have been here
3 before, it's the same place we have had lunch in the
4 past.

5 We're going to start promptly at 12:30
6 this afternoon. We have a panel of four speakers. I
7 think you will find them very interesting. What we
8 will do is we will hear from all four speakers first,
9 and then we will -- unless you have a clarification
10 question, then we will handle questions and answers
11 for the group as a panel.

12 At 3:00 we will have an update on TVA
13 projects. Then at 3:40 a Wolf Creek Dam status,
14 followed by updates on stewardship organizations.

15 We will adjourn at approximately 4:45,
Page 10

16 a little bill sooner or a little bit later, depending
17 on how the discussions go. Then we will hear more
18 about dinner this evening near the end of the day.

19 A couple of things, please assume that
20 your microphones are on at all times. However, the
21 gentleman back there by sound board will be turning
22 your microphones down or off as they can. If you
23 start speaking and you're not hearing any feedback,
24 then just hesitate for a few minutes and give them
25 time to catch up and they will turn your mics up as
1 you start to speak. 14

2 If you wish to make a comment or if
3 you wish to ask questions, please turn your tent card
4 up on the end and we will try to recognize you in the
5 order that they go up. Rather than waving a lot of
6 hands or interrupting discussion, we will give
7 everyone an opportunity to speak who wants to speak
8 on any particular issue.

9 Any questions about that?

10 Okay. Thank you very much.

11 COUNCIL CHAIR MR. TOM LITTLEPAGE: All
12 right. Thank you, Dave. Now, we will turn it over
13 to Peyton.

14 DFO MR. PEYTON HAIRSTON: I think like
15 Rebecca, we have already established that I am Peyton
16 Hairston. This is my first time serving as the
17 Designated Federal Officer or the DFO. I'm
18 struggling with that acronym.

19 We want to welcome you to this first
20 meeting of the Fourth Term of the Regional Resource
21 Stewardship Council. We obviously appreciate your

willingness to serve both TVA and the people of the Valley that we all are responsible for.

Long before there was a TVA there was the river, and it's played a critical role in the development of this region. It provides water supply, navigation, food and energy.

And as a result the multipurpose regional development efforts of our agency, we have been charged with the stewardship over the river and the surrounding public lands.

The Council was created for us to solicit and receive advice and recommendations from our stakeholders on the way we're carrying out those responsibilities.

Some of you will remember that last year we were gathering public comments as we worked to put together the Land Management Policy. In fact, you held a hearing at one of your meetings. The Council's advice and perspective in that Land Policy Development effort was absolutely vital.

You are here representing the Valley stakes, TVA customers and users of the reservoir system and its associated lands, and we ask that you give us the benefit of your experience and your perspective in the issues that you bring before this group.

Once again, we appreciate your time and dedication, and I look forward to getting the chance to know you better during this term.

Thank you very much.

COUNCIL CHAIR MR. TOM LITTLEPAGE: All right. Thank you, Peyton. I guess our first

4 presenter today is going to be Anda Ray, who is the
5 new Vice President of Environmental Stewardship and
6 Policy. She's going to be talking about the Board of
7 Directors' reorganization and the strategic plan,
8 which incidentally is the back section of your book.
9 So it will be there.

10 Anda.

11 MS. ANDA RAY: All right. Well, thank
12 you. I have only been in the job about five weeks,
13 and as you all know in your jobs, the honeymoon is
14 way long over, right?

15 So prior to this I worked on the
16 Strategic Plan, which is why I have the pleasure of
17 being able to give you a quick overview of the
18 Strategic Plan, but first let's look at the Board
19 members and kind of give you an update there.

20 We now are looking at a full
21 contingency of our nine Board members. The bottom
22 three are not yet confirmed by the Senate. You
23 have -- they serve for a staggered term of five
24 years.

25 Susan Williams and Director Graves, 17
1 Bishop Graves, are both -- their terms expired
2 May 2007, but they can continue to serve until their
3 replacements are named or they are renominated.

4 So President Bush has renominated them
5 and also nominated Thomas Gilliland from Blairsville,
6 Georgia. He's currently the Vice President and
7 Secretary and General Counsel of United Community
8 Bank, which is the third largest bank in Georgia
9 that's based in Georgia. He also graduated from

10 Emory.

11 So both of them last week -- actually
12 Thomas Gilliland last week had a hearing with the
13 Senate Environment and Public Works Committee. The
14 other two don't have to go back. So they will now --
15 that committee will now recommend all three to the
16 full senate, and as soon as they are voted and
17 confirmed they will be sworn in.

18 So we still have Director Graves and
19 Director Williams who are serving concurrently until
20 they are reappointed. So that's where we stand on
21 that. That's pretty terrific to have nine full
22 members.

23 I want to talk now -- go to the
24 strategic plan. I will let you read that, it's in
25 your book, but you know how you always have to -- for
1 those lawyers that are in the room, you always have¹⁸
2 to look -- you are going to look at the fine print.

3 The fine print here says the plan is
4 not intended to address detailed resource issues.
5 This was a plan for the -- people have different
6 terminology for strategy. So this was really a
7 policy level strategy for the Board to look across
8 the entire company and doesn't include implementing
9 plans.

10 What they hope is that people can take
11 this and then implement plans, put implementing plans
12 and strategies underneath it that fit within these
13 guidelines, and that's going to be really applicable
14 to some of the things that you're going to work on
15 and look at that we have got action after list.

16 Next. Can we do next?

17 The framework that was used, this is
18 really more of a process issue, and I would draw your
19 attention to the seven bubbles across the top. They
20 wanted to look at the entire breath and scope of what
21 TVA does, and they looked in these areas to begin
22 with.

23 These areas include things like
24 financial strength. On the right-hand side you can
25 see environmental stewardship, regulatory compliance,
1 and they are going to do a strength, weaknesses, ¹⁹
2 opportunity, and threats in each of these. They want
3 to see what do we do internally that's good, what do
4 we do that's weak? what externally could be a threat
5 or an opportunity? So that's how they ended up
6 starting this whole process.

7 There's three financial slides that I
8 just wanted to show you, because this really began to
9 focus on them. And you will note that the original
10 draft of the strategic plan was really focused
11 heavily on operations and revenue and money and
12 didn't say a lot about environmental stewardship.

13 well, the reason is they want to make
14 sure the company is financially healthy to be able to
15 fund all of the activities, including the stewardship
16 one.

17 The one they noticed was -- what we
18 have is we have a growth of about 1.9 percent on peak
19 of our energy. So this is the capacity growth that
20 you can see here in megawatts. This is just the
21 growth.

22 we're sitting at about 30,000

23 megawatts now, and this is how much it's growing.
24 You can see up to 12,000 more megawatts by the year
25 2019. This is a huge growth.

20

1 In some ways you think that's good
2 because we have economic development and you have the
3 areas that are growing and becoming stronger.

4 On the other hand, it produces --
5 oops -- the issues on the right-hand side, not only
6 do we have sufficient power, are we helping our
7 consumers use the power effectively and efficiently?
8 So can we get a reduction in that growth through
9 energy efficiency?

10 Things that probably affect you-all
11 more are at the bottom. As you have economic growth,
12 what happens? People have got to live somewhere. So
13 then they need the land to use that. Where do people
14 want to live? They always want to live near the
15 water.

16 So now you have this water access, the
17 land-use issues coming in which are -- which
18 sometimes we don't always focus on when you look at
19 economic growth. So those issues were discussed.

20 The other thing that happened is they
21 looked internally, and we have in the past done this
22 wonderful thing of looking in the mirror and saying,
23 you know, we are better than we were last year and
24 we're looking good.

25 well, this Board came along and said,
1 and our President Tom Kilgore, look outside the
2 window, don't look at yourself, and compare yourself
3 to others. When we did our non-fuel operations and
4 maintenance costs, that's the most controllable

21

5 costs, that's mostly labor and projects, was not in
6 the top quartile.

7 In fact, you can see the projection,
8 that if we continued on the way we were, that was
9 going to go higher and higher and higher, sometimes
10 fast -- rising faster than the cost of living,
11 definitely rising faster than our revenues were
12 increasing. You all know that you can't do that at
13 home, you can't spend more than you bring in.

14 So he's taken a very big effort, and
15 this is a critical component of the plan. If we
16 continued on that pink line, we now have to lose
17 weight before you can maintain. Before you can say
18 my goes-ines are going to equal my goes-outes, you
19 better get down to the bottom quartile.

20 So that's what that sustainable
21 challenge is. So for the next four years we're
22 looking at almost a half a billion dollars of
23 sustainable decrease, 420 million over the next three
24 years of reduction in our non-fuel.

25 Once you get there on that bottom blue
1 line, now you can maintain and be at the bottom -- ²² at
2 a top quartile. So that's the -- that represents \$10
3 billion. That \$10 billion is critical for us to be
4 able to provide sufficient power generation capacity
5 and fund our environmental stewardship and
6 environmental controls activities. So it is critical
7 to this strategic plan that that \$420 million is met
8 in reduction.

9 The other thing that a lot of people
10 focused on was TVA's debt, and the Board took a very

11 hard look at that. What they want to do is pay down
12 the existing debt. You want to pay off the mortgage
13 on your house before your house isn't worth anything
14 anymore, and that's what they want to do with our
15 assets.

16 You can't see it here, but maybe you
17 can in your book a little bit better, "Pay down our
18 existing debt before the asset value is depleted,"
19 but you have got to live somewhere and we have to
20 continue producing power and we need new generation
21 assets as the old ones retire. So you're going to
22 take on new debt.

23 So what it looks like to somebody on
24 the outside is a net very little change. It looks
25 like you're not doing anything to your debt over this
1 period of time, but what you're actually doing is ²³
2 paying down your existing and you're starting up new
3 debt. The new debt will be associated per megawatt
4 installed, and that's the health of the company that
5 they want to measure, is to make sure that our debt
6 related to our installed capacity, in other words,
7 that your debt related to the value of your house
8 looks much better, that you have a
9 lower-debt-to-equity ratio, and that's what they are
10 looking at on the new debt.

11 So I know that's a lot of financials,
12 but they had to look at that before they could even
13 say, what else can we do?

14 Part of -- they sent out a draft.
15 You-all -- several of you provided comments on the
16 draft. We have had nine briefing sessions.
17 Employees commented. They were all tracked and

18 characterized.

19 Very interesting results. I am going
20 to get to those in a second. There were significant
21 changes before this plan was approved based on those
22 comments, and I think that's a real credit to the
23 Board because several of you have been involved in
24 organizations where they put out a draft and it's
25 perfunctory and they really don't want your comments.

1 In fact, they just want you to buy in. They took²⁴
2 these comments, and I will list the changes that were
3 made.

4 So it was approved on May 31st, 2007.
5 It was a unanimous vote, but here's the things I want
6 to point out: It does reinforce those top bullets,
7 which I am not going to read, but every one of those
8 bottom bullets was added as a result of the comments.

9 They were focused so much, and they
10 realize it, on the finances and the operations of the
11 company, the goes-ines and the goes-outes that they
12 said, you know, we do need to pay attention to energy
13 efficiency and peak reduction, and they came out with
14 this statement.

15 Resource stewardship, there was
16 nothing in there. I kidded Bruce last night, and he
17 said, "Well, there's still not a whole lot."

18 I said, "Yeah, but it was zero and now
19 it's a whole lot, and in math terms, you know, that's
20 an infinite improvement."

21 So we now have something there, and we
22 do have an action associated with that. Global
23 climate change, we didn't even mention greenhouse

24 gases, and now we do.

25 So these comments were added and some
1 guidance was provided by the Board in their final²⁵
2 strategic plan.

3 This is a kind of -- they wanted to do
4 an "if then" statement. You know how people have to
5 make certain assumptions when they come up with a
6 strategic plan?

7 I want to point out a couple. Let's
8 see. The first one probably is, "We have to rely on
9 energy-efficiency offsets for one year's load
10 growth." well, you saw that the one year's load
11 growth was 700 megawatts. We have now come out and
12 said we want to find 1,200 megawatts of energy
13 efficiency.

14 why is that important?

15 I don't know how many of you use, say,
16 compact fluorescents, but if you reduce the energy
17 consumption in your house through a series of
18 voluntary actions, then we're going to rely on that
19 and we're not going to build bricks and mortar to
20 satisfy the valley's power needs.

21 Then you decide you don't want to do
22 that anymore, you know, they come out with some fancy
23 new light bulb that does all of these things but it's
24 not particularly energy efficient and you change,
25 we're now in the hole and not being able to provide.²⁶

1 So what TVA wants to look at is
2 sustainable energy efficiency improvements, ones that
3 we can count on so that you're not left in the dark
4 when we change our behavior and there's not enough
5 capacity.

6 The other thing to point out is,
7 again, we have got to achieve this top non-fuel L&M
8 savings and the environmental -- oops -- the
9 environmental controls spending doesn't exceed --
10 environment controls, not environmental stewardship,
11 doesn't exceed 4.2 billion. That's important because
12 it was put into the economics.

13 Does it mean we won't spend that much
14 or we won't spend more? No, but that's what was --
15 went into the economics to look at the reduction and
16 cost.

17 If all of those things happen, then
18 TVA can look at a single-digit rate increase expected
19 early next year in 2008 and our financial obligations
20 will remain below the congressional statutory debt
21 limit, and that's obviously very important.

22 The other thing that's important is
23 this is a strategy that several of our surrounding
24 utilities, at least to the south, didn't take. They
25 decided they were going to go out to the market to
1 get power, and as long as there was a glut of excess²⁷
2 energy, that's terrific. Well, there's not anymore.

3 So TVA has made a statement that they
4 would only depend on 5 percent to the market above
5 our reserves and that we would build the rest so that
6 we would have hard capacity on the ground. Well,
7 that's a nice strategic goal. It takes money.
8 That's another reason why that reduction in non-fuel
9 L&M is critical because that's where they have got to
10 get at least 25 percent of the money.

11 Reducing the carbon footprint and

12 meeting our environmental commitments, that includes
13 the stewardship commitments.

14 This is the -- this alignment is TVA's
15 planning documents. You see the mission, which you
16 are all very familiar with. The strategic plan, the
17 business plan for TVA, which the -- which contains
18 our budgets, and the Board approved that on
19 September 27th.

20 You see our score card, which we -- we
21 keep -- keep a record of certain performance metrics
22 and then we sometimes -- well, for every organization
23 we will have a performance metric associated with
24 those.

25 we have our individual performance
1 plans. When I write down an objective of something²⁸
2 that's going to happen for me or an employee, it's
3 aligned with the critical success factor.

4 This is the first time in the history
5 of TVA that our critical success factors are aligned
6 in every single one of these planning documents.
7 Those critical success factors are exactly the same
8 all the way up through the strategic plan. So we
9 have alignment.

10 Now, that's a plan. What's the hard
11 part in any plan? Execution. So now the proof is in
12 the pudding if we can actually execute and follow
13 those objectives.

14 Specifically with a -- an eye on the
15 environmental stewardship, TVA did -- TVA Board did
16 reaffirm the mission. These are the words they used,
17 and I want to point out a couple of them.

18 You noticed obviously supporting the

19 flood control, navigation, recreation, and water
20 quality, you know, that's not in the mission, but
21 it's here where they put it in the strategic plan.
22 It's something we have always looked at for a long --
23 you know, many, many years, but now they have
24 reaffirmed that and looking at protecting the
25 shoreline resources. So they have added those
1 statements. 29

2 Additionally, they talk about these
3 things, which granted, they are high level, but they
4 are things that we can build upon. I'm not going to
5 read them all, but managing the reservoirs and
6 adjacent lands, you have your land policy.

7 Being proactive in addressing
8 environmental concerns, that's a big deal. You could
9 just be -- have a compliance strategy. I'm just --
10 you put out a rule, I'll comply, but I am not going
11 to be proactive.

12 So those are some of the statements
13 that they have made in the strategic plan with
14 respect to environmental stewardship.

15 So what does that mean for us and what
16 are we going to do next?

17 Well, one thing is we're going to
18 start measuring our environmental stewardship with
19 some metrics, and, you know, that's really hard
20 because everybody likes to say, well, I am different,
21 you can't measure me.

22 One of the things you have already
23 talked about is clean marina certifications. Two new
24 ones that are being worked on are water stewardship

25 and land stewardship. You can see the units and 30
1 dimensions there. We have always had the land and
2 the water stewardship.

3 Now, I am not going to tell you
4 there's not room for improvement because when it says
5 objectives met, well, we're the ones that set the
6 objectives and we're the ones that measure the
7 objectives. So we're going to meet our objectives to
8 the extent possible.

9 So we need some work on these, but
10 this is a great start. Recreation projects, percent
11 to plan, well, at least we're tracking recreation
12 projects.

13 Percent to plan, is that really a good
14 measure, but at least we're tracking them and there's
15 a focus on there. So we will always take any
16 suggestions that you have on metrics that will help
17 us better determine the value that we're providing on
18 environmental stewardship.

19 A brand new one is stakeholder
20 responsiveness. It's not just about cycle time.
21 It's about letting people know that you have heard
22 them, letting them have empathy that you understand
23 where they are coming from, even if we can't grant
24 them exactly what they want.

25 And Vickie Ellis is going to be our 31
1 new Senior Manager of Stakeholder Relations and
2 Employee Relations. It's Employee Relations because
3 how our employees feel about themselves definitely
4 reflects on how they interact with the customers. So
5 we don't know what measure that's going to be right
6 now, but we have added that.

7 Finally, you participated in the
8 Reservoir Operations Policy, the TVA Land Policy. As
9 a result of the strategic plan, we have been given
10 two more actions. The Natural Resource Management
11 Strategy is in draft form now, and that's something
12 that, I assume, we will be discussing with this group
13 at some time in the future. I am looking to
14 Bridgette.

15 Then the TVA Environmental Policy
16 Level Strategy, that's overall for TVA, both the
17 compliance side and the environmental stewardship
18 side, what's the guidance that the Board wants to
19 give that's one more step down from what's in the
20 current strategic plan? So we expect these things to
21 be deliverables in 2008 as a result.

22 So with that, do you have any
23 questions?

24 COUNCIL CHAIR MR. TOM LITTLEPAGE: Has
25 anybody got any questions for Anda regarding the
1 strategic plan? 32

2 I guess I would ask one just relative
3 to this Council's role and functions, it seems like
4 there was certainly support for what the Council is
5 doing, but was there any expansion of our role or how
6 does the role of this Council play into what the
7 findings of the plan were?

8 MS. ANDA RAY: The only discussion I
9 had, and I will look to see if there were further
10 ones, is that they looked to the Council to provide
11 that advice on the environmental stewardship and
12 recognizing the comments that the original draft had

13 no mention of resource stewardship and environmental
14 stewardship, they recognized that there needs to be
15 more work done there.

16 So we see your role as helping us to
17 review this natural resource management strategy,
18 looking at the component of the environmental policy
19 that affects the stewardship.

20 So I think it's a very big role in
21 helping us better define what we need to do in the
22 environmental stewardship area.

23 COUNCIL CHAIR MR. TOM LITTLEPAGE: All
24 right. Thank you very much.

25 Any other questions?

33

1 I guess I would ask the Council's
2 pleasure because basically we're ahead of schedule a
3 little bit. So would you prefer to take a break or
4 go ahead and try to proceed?

5 Chuck, I am looking at you to see if
6 you're ready for your presentation.

7 So what would the preference of the
8 Council be? Go ahead? Does that sound good?

9 Okay. Then I will ask Chuck to come
10 and talk about how dry we are in the valley. It
11 sounds like a country song, doesn't it?

12 MR. CHUCK BACH: As I said, I'm Chuck
13 Bach. I'm the Senior Manager for River Scheduling,
14 and we're responsible for the day-to-day operation of
15 the river through all the integrated uses of the
16 river.

17 Our responsibility goes from the
18 Kentucky Dam all the way up through Muscle Shoals,
19 Chattanooga, Knoxville, and on up through the

20 tributaries. So we cover a wide range of area.

21 We also work very closely with the
22 Corps of Engineers. As many of you know, Lake
23 Barkley and Kentucky are connected to each other
24 through a canal. So we daily work with the Corps to
25 make sure things we do in Kentucky and Barkley are
1 together. 34

2 My purpose today is to provide an
3 overview of TVA's river system operation's response
4 to the dry conditions this summer.

5 My outline is to recap the dry
6 conditions, explain how we operated the system in
7 response to those dry conditions, and talk about the
8 impacts on the system benefits.

9 I believe Wayne covered and talked
10 about the system benefits a little bit. So I won't
11 spend time there.

12 First though I want to set the stage
13 by giving you a brief review of the operating policy
14 and some of the key terms I will be using, and that's
15 important because even though we experienced a record
16 drought this summer we did not deviate from our
17 operating policy. As a result, the Reservoir
18 Operations Study.

19 If you'll remember, our operating
20 policy is based on seasonal rainfall and runoff
21 patterns, allow seasonal use of storage, for example,
22 that's higher water levels in the summer for
23 revocation, and includes flow requirements all along
24 the system to ensure sufficient water flow to meet
25 downstream needs.

1 Our annual reservoir operating cycle
2 starting in January, that's when we pull our
3 reservoirs down to the lowest level to make room for
4 the spring rains. The spring rains usually come in
5 the March time frame.

6 Hopefully we get the reservoirs full
7 by June 1st, then we hold those up to Labor Day, and
8 then after Labor Day we have unrestricted drawdowns,
9 that's a very simplistic way to look at that, but
10 that's our annual cycle and then it goes over again
11 to the next year.

12 Let me define some of the key terms
13 starting with the tributary and main stem reservoirs.
14 This is a schematic of the Tennessee River System,
15 starting with Kentucky and Barkley here, going all
16 the way up the river, and then with all the
17 tributaries around there. That's the range of things
18 that we operate the river in terms of.

19 Tributary reservoirs up here and
20 main-stems down here. We have 10 large and 30 small
21 tributary reservoirs. They provide the bulk of our
22 flood storage. They fluctuate as much as 30, 50, 70
23 feet. In dry conditions they provide the water to
24 meet our minimal flow requirements as we go down
25 through all the system.

36

1 We have nine main stem rivers, dams
2 here. They provide the navigable channel from
3 Paducah to Knoxville, and they only fluctuate 4 to
4 5 feet. So tributaries fluctuate a whole lot and
5 main-stems fluctuate just 4 or 5 feet.

6 Let me define some of the terms.
7 First let me just describe what you see here. This

8 is a graph showing volume here in 1,000 day second
9 feet, that's just a measure of volume, and then month
10 across here.

11 First let me define flood guide. It's
12 our summer target level. It shows the amount of
13 storage for flood damage reduction, and our operating
14 objective is to keep the reservoir level at the dam
15 at or below this line to be ready for flood events.

16 The next term is system minimum
17 operating guide or SMOG as we call it. SMOG is used
18 to determine how much flow is to be released from
19 Chickamauga Dam to meet minimum flow requirements.
20 The purpose of the minimum flow, of course, is to
21 predict tributary elevations while insuring
22 downstream flows for water quality, water supply, and
23 navigation.

24 Flow is measured at Chickamauga
25 because it's the first dam below all the major
1 tributary reservoirs. This SMOG is based on the 37
2 water stored in the ten largest tributaries.

3 Some things to know here is note how
4 close it is right there in June and July, and the
5 purpose of that, of course, is to help us keep the
6 elevations up as high as we can. So we kind of
7 thread the needle during that time, you might say,
8 and then we hold that water up, and if we drop below
9 that, we go to minimum flows to protect those
10 elevations. Of course, the reason for that is to get
11 the maximum value for reservoir recreation.

12 If we drop below the SMOG we follow
13 the pastel colors in blue here, and if we're above

14 the SMOG we're in the pink colors that you can see
15 there. This is, of course, during June, July, August
16 time frames.

17 So in the year we were above that SMOG
18 we followed the stair-step go up through here and up
19 there, and then we start over here at about 13,000
20 and it works its way up to 29,000 by the end of
21 August.

22 If we're below the SMOG we stay at
23 13,000 here and then we jump up to 29 or 25,000 in
24 August, and the reason for that is August is usually
25 our warmest month and we have to protect the
1 oscillative capacity of the river at that time. 38

2 Now, another key point to remember is
3 we have minimum flow requirements all along that
4 reservoir, that it's not just at Chickamauga. So I
5 am responsible for taking care of minimum flows all
6 the way up and down the river, including below the
7 tributaries.

8 The next thing I would like to define
9 is what we call our balancing guide. The balancing
10 guide is the red line here. Again, the same graph,
11 volume versus month of year here.

12 The purpose of the balancing guide is
13 to equalize impacts when it's necessary to move water
14 downstream. Our objective is to keep the elevation
15 of all reservoirs similar relative to their positions
16 between the flood guide and the balancing guide. So
17 when we drop below the SMOG, we start balancing using
18 that balancing guide.

19 In addition to balancing guide one,
20 there are two other balancing guides, a balancing

21 guide two and a balancing guides three. So when we
 22 drop below here, balancing guide one, we go down to
 23 balancing guide two. Balancing guide two was set at
 24 winter levels pre-reservoir operations study level.
 25 Balancing guide three was set to protect end
 1 reservoir water supply intakes. 39

2 Now, this is the first year we went
 3 below balancing guide one since we implemented our
 4 policy. Something we do every year is lessons
 5 learned. We're going to continue to do that. We
 6 will do lessons learned and we're going to look at
 7 balancing guide two with the goal of improving our
 8 implementation of our operating policy this year.

9 A little bit about tributaries. As
 10 you know, not all the tributaries are created equal.
 11 They are built for -- the reservoirs aren't created
 12 equal, excuse me. They are built for different
 13 purposes, different sizes and shapes. Some hold more
 14 water than others.

15 For example, withdrawing the same
 16 amount of water from a deep bowl-shaped reservoir,
 17 like Fontana up here, will expose more mud bank than
 18 drawing the same amount of water from a shallow
 19 reservoir like Chatuge down here. The difference, of
 20 course, is in the shape of the reservoirs.

21 On Labor Day Fontana was down 52 feet
 22 below its normal summer target level. Obviously
 23 recreation use was impacted significantly, but it was
 24 still possible. If we drew Chatuge down 52 feet it
 25 would be bone dry. There would be no recreation. 40
 1 There would be no aquatic habitat. So that's why we

2 try to balance them and not use the same amount of
3 feet pull down.

4 Those are some terms that we use when
5 we implement our operating policy and try to balance
6 all the reservoirs.

7 Let me now talk a little bit about the
8 dry conditions that we faced this summer. This is
9 the U.S. drought monitor. The key point is here
10 obviously. If we look over here you see that's D4
11 drought and exceptional. Gene Gibson is going to
12 talk more about this in his presentation. So I won't
13 cover it any more. It's a statement of the obvious,
14 very dry.

15 Next I would like to talk a little bit
16 about rainfall and runoff, 66 percent of normal for
17 FY2007 and 54 percent of normal for runoff in FY2007,
18 the driest year in 118 years of our record.

19 Some things I wanted to point out
20 here. This is inches here versus months. The dark
21 blue line is the normal rainfall. The dotted blue
22 line is the normal runoff. You can see the red line
23 for observed runoff and rainfall.

24 The last time we had above normal
25 rainfall was in November of last year. Okay. It's
1 been dry since then. We have got -- occasionally get⁴¹
2 some rain, but notice there's no runoff. The ground
3 is so dry it's just absorbing everything. The grass,
4 the trees, the ground, so that when it does rain
5 we're not getting anything coming into the
6 reservoirs.

7 I was at Fontana talking to the people
8 a couple of Saturdays ago, that was right after this

9 rainstorm right here, and I asked one of the marina
10 operators how much the reservoir went up over there.
11 Now, they got between 2 and 1/2 and 3 inches. It
12 went up 4 inches in Fontana. The ground just soaked
13 up all that water.

14 Okay. If we look at 2007 here's what
15 we see, the same graph that I talked about before
16 with the same balancing guides, SMOG flood guides and
17 everything on it. What we have added is the 2007
18 operation this year.

19 What you see is a couple of things
20 here. After that rainfall that we got in November,
21 of course, it turned dry. So looking back it's dry
22 and looking forward there's no forecast for rain.

23 So about the February/March time frame
24 we went into a conservation mode and just started
25 hanging on to every bit of water that we got. We
1 only ran minimum flows down through the system and ⁴²
2 anything else we held on to.

3 The next thing I would like to note is
4 we reached our maximum here in May. Shortly
5 thereafter we dropped -- or right in that time we
6 dropped below the SMOG also. So we stayed at minimum
7 flows and continued on that minimum flow going on
8 through the rest of the year hoping for remnants of a
9 hurricane, I guess.

10 Of all the reservoirs, the only
11 reservoir that actually reached its flood guide was
12 Norris. For some reason, the Norris watershed in May
13 got a humongous rainstorm, and we just held on to
14 that water, we didn't release it, and then used it to

15 supplement providing the minimum flows through the
16 rest of the year.

17 So that was the only reservoir that
18 reached its target level. All the rest didn't reach
19 their target level. They averaged about 13 feet on
20 average below reaching their target levels, and then
21 we used that water to help supplement the minimum
22 flows later in the year.

23 Of course, the water is being used for
24 water quality, navigation, water supply, those kinds
25 of things. We used that water that we did for
1 minimum flows to generate hydropower. We didn't
2 bring any extra water down the river to generate
3 hydropower.

43

4 For the fiscal year '07, the hydro
5 generation was 68 percent of normal. So we were
6 32 percent below normal hydro generation in the
7 fiscal year '07.

8 You have already seen this slide. In
9 a normal year Chickamauga flows are the driver for
10 the system, but because it was so dry this year the
11 driver for the system for the months of June and July
12 was 18,000 CFS at Kentucky. And again, that's for
13 water quality and navigation purposes.

14 Being so dry there's no inflow coming
15 in below Chickamauga. So you had to supplement that
16 water CFS flow through Chickamauga and pulling it out
17 of the tributaries.

18 What does that look like in terms of
19 flow?

20 This is the weekly flows in cubic feet
21 per second for June through September. If you look

22 at the June time frame you will see slightly larger
23 than 18,000. Remember, I said 18,000 was the driver
24 from Kentucky. Again, no inflow coming in,
25 evaporation, we had to run a little extra through
1 Chickamauga to meet our 18,000 at Kentucky. 44

2 You may remember in July we got a
3 little rain. Notice that we were able to cut back on
4 the flow through Chickamauga because we got a little
5 rain and we got some inflow and we were able to
6 maintain 18,000 by running these amounts here.

7 In August, remember I said the driver
8 was 25,000 at Chickamauga. So we bumped back up to
9 25,000. Again, that's for assimilative capacity of
10 the river in the very warm August time frame.

11 Then as soon as Labor Day came around
12 I have that unrestricted drawdown, but obviously
13 there's no water to draw down. We went right back to
14 minimum flows, you will see that they dropped down
15 significantly, and we stayed there. We will
16 continued to stay there. Any water we get we will do
17 our minimum flows and then hold on to the rest of the
18 water trying to raise the elevations back up.

19 Next I would like to talk a little bit
20 about operating guides. This is the Nottely
21 Operating Guide. You have elevation on the Y axis
22 month along the X axis, the same kind of curves that
23 we talked about, the flood guide, the balancing
24 guide.

25 A couple of other things on here. You
1 will see a gray area that goes along through here, 45
2 that's what we expect the elevations to be in 80

3 percent of the time. So the other 20 percent of the
4 time, they were going to be either above or below
5 that gray area. This year we're obviously below.

6 For comparison purposes, we added on
7 the operation for 2006. You can see we stayed fairly
8 close to the flood guide because we had water and we
9 could do that, but this year, like I said, in
10 February we went into that conservation mode and held
11 on to as much water. In the May time frame we
12 reached our max and dropped below the balancing guide
13 and then stayed -- continued mid flows.

14 In the July time frame, when we got a
15 little rain, we kind of flattened out there, held our
16 own, and then drew water down. Now we're back over
17 here at balancing guide one and trying to hold steady
18 there.

19 Comparing that to Fontana, the same
20 kind of curve, elevation versus month, same kind of
21 flood guide, balancing guide, expected elevations
22 gray area there. Again, black line, how we did last
23 year. Then the red line. You will notice the same
24 kind of curve. Maxing out in the May time frame,
25 kind of hold a little steady in July, and then
1 dropping down in August, and then after we were able⁴⁶
2 to go back to the mid flows and kind of leveling out
3 there.

4 Here's Douglas. There's a comparison.
5 Again, elevation here. Now, the elevations you need
6 to note are different. They are not the same x's.
7 Depending on the reservoir, they are different. Once
8 again, the same kind of curves that we showed before.

9 In 2006 we were able to stay fairly

10 close until this time frame, and then here's 2007,
11 the May time frame, and then it drops down and kind
12 of levels out in July and comes down. Now we're
13 pulling Douglas down a little harder right now
14 because compared to the others it's a little bit
15 higher on the balancing ratio. The rest of the
16 reservoirs are in the back of your notebook if you
17 want to compare those.

18 Another thing we look at is comparing
19 the elevations over time. And again, this is
20 elevation here versus year here on the bottom. In
21 2004 we implemented the operation policy, and for the
22 first three years we stayed up here, and then this
23 year you can see Nottely down there.

24 A couple things to recall. Wayne may
25 have talked about this. In 2004, this time of the 47
1 year, we dealt with Ivan. All the questions and
2 comments I would be getting on dry would be on why
3 are you flooding me. We were in a flood situation
4 and that's what we had back then.

5 The drought has lasted several months.
6 when I get a flood, a flood will last four or six or
7 eight weeks, and then we pass the water down. So the
8 flood you might think of it like the flu. The
9 drought is like a migraine headache that's lasted for
10 several, several months.

11 Going on and looking at Fontana will
12 see the same kind of thing. In 2004 is same graph of
13 elevation versus year. Here again, is Ivan, we held
14 it up there, and then dropped back down this year.
15 we don't have the water to fill the reservoir.

16 The next one is Douglas just to
17 compare the same three as before. Here is Ivan. We
18 got right near the top of the gates at Douglas in
19 2004. We were very worried about going over the top
20 of the gates there. We were very fortunate. The
21 forecast was for 16 inches of rainfall and we only
22 got six or eight. If we had got 16 inches, we would
23 have had bad flooding. We were very, very fortunate
24 there. Again, holding the levels here and then
25 dropping down to this.

48

1 As you might expect, I have had lots
2 of advice and comments and suggestions this year on
3 how to run the river, and a lot of them are very good
4 and I appreciate those very much so. You can kind of
5 put them in three main questions that you can read up
6 here. You can take all those comments and put them
7 together.

8 why didn't my reservoir reach full
9 pool this summer? Obviously, we didn't get the rain.
10 If we had got the rain, we would have filled it up.

11 It rained at my house, why didn't the
12 reservoir level go up? Well, everything is so dry
13 it's just not getting into the reservoir.

14 The last one is why is my reservoir
15 lower than the other reservoirs in my area?
16 Sometimes people compare tributary versus those main
17 stem reservoirs. Sometimes a reservoir gets a little
18 more rainfall, like Norris, than the other ones.
19 Sometimes reservoirs are different shapes and sizes,
20 so you will see a bigger flood range.

21 So what were the impacts on these?

22 First on navigation, we released water

23 to meet our minimum flow commitments for navigation
24 on the Tennessee River. The barge traffic continued
25 with minimal interruptions. Flood damage reduction,
1 tongue and cheek, I can say we did great. 49

2 Seriously, we're dealing with dry
3 conditions. Like I said, three years ago we dealt
4 with flooding conditions. It's just the nature of
5 our business, and it will continue to be that way as
6 we go on in time.

7 Power supply, as I mentioned, we were
8 68 percent of normal in FY2007. We had lots of
9 impacts to our nuclear and fossil plants. We had to
10 reduce outputs in August. Of course, we'd love to be
11 able to give them more water, but we were in that
12 minimum flow operation and we didn't give them more
13 water and they had to cut back to meet their thermal
14 permit limits.

15 You may have read we even had to shut
16 down a unit at Browns Ferry. Then we ran cooling
17 towers almost all summer at Browns Ferry and
18 Sequoyah.

19 We had turned downs or derates at our
20 fossil plants, Cumberland, Gallatin, Colbert, John
21 Sevier. Derates is where you cut back on the
22 generation so you don't exceed your water temperature
23 limits.

24 We talked a little bit about water
25 quality. We have had minimal impacts this year. We
1 maintained our minimum flows. We provided aeration 50
2 below 16 of our dams to help the tail waters. We buy
3 a lot of liquid oxygen to supplement that. There

4 have been some impacts and there have been some fish
5 kills, but not as significant as people have
6 predicted earlier in the year.

7 water supply, Gene is going to cover
8 that in much more detail, but we did have some
9 impacts to our industrial users. Bowater, for
10 example, got very close to having to close down their
11 operation. Of course, they asked for more water and
12 we said, no, we can't give you any more, we're giving
13 you minimum flows. They had to look at ways to
14 change their operation.

15 Recreation, as I mentioned earlier,
16 Norris was the only reservoir that got to its maximum
17 level. Obviously, there were boating hazards because
18 of the lower levels. You have shallow water
19 mudflats. Clearly there were tailwater recreation
20 impacts.

21 Our trout angler friends wanted more
22 water for their trout. Recreation outfitters asked
23 for more water. We just couldn't give it to them.
24 We stayed at minimum flows and stayed true to our
25 course of action.

1 I think our operating policy made the⁵¹
2 impacts of the drought less visible this year than
3 they would have been under previous operating policy.
4 We started hopefully a little higher in the
5 wintertime with levels.

6 When I was doing Norris I went back
7 and looked, currently they're 990 feet, back in the
8 '50s they went down to 940. So there were clearly
9 some significant impacts on the reservoirs. I think
10 by going to minimum flows in February we helped to

11 minimize some of those impacts.

12 The bottom line, I guess in one of the
13 driest years ever we were able to maintain the
14 benefits on the river that our users have come to
15 depend on. I think our operating policy is robust
16 enough that no modifications were required, even
17 though we were in a very drought condition.

18 That doesn't mean that we don't need
19 to take some lessons learned and go back and
20 re-evaluate how we implement this and we will, but
21 the operating policy was robust enough to get us
22 through the summer.

23 Before I conclude I would like to give
24 you my look ahead. These are graphs from the
25 National Weather Service NOAA, three-month outlook.
1 Over here on the right, or the left rather, is the ⁵²
2 temperature. The western part of the valley shows a
3 slightly higher than normal chance of above-normal
4 temperatures and equal chance in the eastern part.

5 Of more interest to us, I believe, is
6 the precip, and you see they are predicting equal
7 chance of above or below rainfall.

8 Okay. You may have heard something
9 called La Nina. La Nina is developing out on the
10 Pacific, and that's where it gets cooler water
11 temperatures. If La Nina develops more, the result
12 typically in the Tennessee Valley has been warmer and
13 dryer conditions.

14 The National weather Service has
15 downgraded the number of hurricanes. I was hoping
16 for the remnants of a hurricane to help us fill our

17 reservoirs, not a hurricane but the remnants. That
18 doesn't look good.

19 So my crystal ball looking forward,
20 continue to stay dry, continue to stay in those
21 minimum flow operations, conserve any additional
22 water that we get, and continue to balance the
23 tributary reservoirs.

24 If my crystal ball fails me and we get
25 rain, of course, we will stay at min flows until we
1 get our elevations back up, and then we will continue⁵³
2 to balance.

3 So with that, I would be glad to try
4 to entertain any questions.

5 COUNCIL CHAIR MR. TOM LITTLEPAGE: Any
6 questions for Chuck?

7 Karl.

8 MR. KARL DUDLEY: Chuck, with TVA's
9 fiscal year just ended, do you have an updated number
10 on the dollar amount that was lost due to the power
11 supply change?

12 MR. CHUCK BACH: In terms of lost
13 dollars for the hydro?

14 MR. KARL DUDLEY: Yes.

15 MR. CHUCK BACH: I don't have those
16 numbers. I know percentages, but I don't know the
17 actual amount. That's something that we probably can
18 calculate and get.

19 COUNCIL CHAIR MR. TOM LITTLEPAGE: All
20 right. Russell.

21 MR. RUSSELL TOWNSEND: Yes. When you
22 mentioned, I guess, the impacts from water quality
23 and the water supply, you mentioned fish kills and

24 things like that, what studies did TVA do or what did
25 TVA do to make observations on the impacts of these
1 kinds of natural resources from these droughts 54
2 throughout the system?

3 MR. CHUCK BACH: We work closely with
4 the state agencies, and both TVA and the state
5 monitor, along with local people. Our fishermen
6 provide a lot of information about trout. We have a
7 group that goes out and collects reservoir
8 information on a periodic basis all across the
9 valley.

10 So we have information on dissolved
11 oxygen, temperature, other water quality parameters,
12 and we share that inside and outside TVA. The state
13 people have been providing feedback.

14 Gene will talk more about his state
15 partnership where they meet weekly. I think there's
16 information passed back and forth in that weekly
17 conversation that goes on in the water quality.

18 So we're in contact in that sense and
19 sharing that information and making sure everybody is
20 up to speed and talking about issues that all of us
21 have.

22 MR. RUSSELL TOWNSEND: Was there
23 anything outside the normal done by TVA, other than
24 the normal observations that TVA makes and the normal
25 communications that TVA has with their state partners
1 and local individuals? 55

2 MR. CHUCK BACH: If we perceive an
3 issue we implemented additional monitoring and other
4 things.

Bridgette, do you want to add to that,
because your people do the monitoring.

MS. BRIDGETTE ELLIS: Yeah. We had a couple of situations in the summer where we were -- where we knew that some of our thermal discharges at our power plants were -- the temperatures were getting higher and higher and getting up close to our limits.

So working with the states and working with the Corps, we actually did some around-the-clock monitoring at a couple of our plants to make sure we knew what those temperatures were, to see what the condition of the fish were. We did a lot of those kinds of things.

So there were a couple of places, like Browns Ferry Nuclear Plant and also at Cumberland Fossil Plant, where we actually did some around-the-clock 24-hour sampling to see what was going on, see how far down our thermal effluents was going and those kinds of things.

So when we get into those kinds of situations, we're doing it not only from the stewardship standpoint but also from a compliance standpoint. So we want to make sure that we understand if there are any issues going on there.

COUNCIL CHAIR MR. TOM LITTLEPAGE: All right. Kenny.

MR. KENNETH DARNELL: You have been talking about maintaining minimum flow based on what you guys feel are the requirements.

Assuming that the drought continues for a length of time, is there -- has there been any

12 speculation on what the absolute minimum sustainable
13 flow on the Tennessee system is or will it just
14 continue to drop until in the worst-case scenario it
15 dries up?

16 MR. CHUCK BACH: Bear with me for a
17 second. Using the Douglas operating guide as an
18 example, this dotted line down here is balancing
19 guide three, okay, and that was set to protect the
20 water supply intakes.

21 we would continue to provide minimum
22 flows until we reached that balancing guide three.
23 Then at that point we would stop our minimum flows.
24 The only flow that would go down the river is what
25 comes in and what goes out. We would stop and hold
1 at that level to protect the water supply intakes. 57

2 MR. KENNETH DARNELL: But do you get,
3 say, groundwater flows coming into the system, if it
4 didn't rain, what would happen?

5 MR. CHUCK BACH: Well, obviously if it
6 doesn't rain, we stay in the no-rain scenario, the
7 groundwater is going to continue to drop and it's
8 just going to make this problem even worse.

9 Groundwater is a contributor to
10 filling our reservoirs, and without any rainfall
11 runoff we're just not going to get groundwater to
12 help fill those reservoirs.

13 So, again, we will meet -- what we
14 would do if we got to balancing guide three, we would
15 stop our minimum flows at that point and then just
16 provide -- any inflow would be outflows. We wouldn't
17 take any extra water out of the tributaries to

18 provide minimum flows. We're going to protect those
19 water supply intakes.

20 MR. KENNETH DARNELL: Thank you.

21 COUNCIL CHAIR MR. TOM LITTLEPAGE: All
22 right. I was just going to follow up on that and ask
23 a question.

24 If you look at 2007 here at Douglas
25 you see you were above your curve at the beginning of
1 the year. 58

2 MR. CHUCK BACH: Yes.

3 COUNCIL CHAIR MR. TOM LITTLEPAGE: And
4 I would assume, you know, you would hope to be above
5 that curve as you go into the quote/unquote wet
6 season of the year.

7 Are there any specific approvals or
8 coordinations that you have to make when you're
9 operating above those curves?

10 MR. CHUCK BACH: Yes. I'm supposed to
11 get approval. I'd go to my senior or my VP and talk
12 with them to get approvals.

13 Normally what we try to do is if we go
14 above the blue line, like you see here, to get it
15 back to the blue line to provide that flood storage,
16 but we looked out in the future and there's no rain
17 in the forecast. So we decided to let's hang on to
18 that water as long as we can. Maybe we will get some
19 rain. If we do, then we will start pulling that
20 water out.

21 With a forecast of very, very dry
22 conditions, nothing in the March time frame to speak
23 of, we held on to that water. So you can see that it
24 didn't take long and we're back below the blue line

25 and headed toward the SMOG and not filling our
1 reservoirs. 59

2 COUNCIL CHAIR MR. TOM LITTLEPAGE: All
3 right. And I guess I would just ask outside TVA. So
4 basically you're not hampered by any other approvals
5 that are required through various state or other
6 issues?

7 MR. CHUCK BACH: No.

8 COUNCIL CHAIR MR. TOM LITTLEPAGE: So
9 basically you have the discretion to manage that as
10 you best see fit?

11 MR. CHUCK BACH: Yes. We try to stay
12 true to our policy, which is stay close to that flood
13 guide as close as we can. If we go above it, we
14 bring it back. If we go below it, we try to get it
15 back up. That's the implementation plan that we have
16 in our forecast center that we see.

17 COUNCIL CHAIR MR. TOM LITTLEPAGE: Yes.
18 I'm sorry. W. C.

19 MR. CHUCK BACH: W. C., how you doing?

20 MR. W. C. NELSON, JR.: Fine. I guess
21 I am wondering if you could explain to us why you
22 allowed Norris to go to a practically full level,
23 which deviated from the ROS?

24 I think a lot of credibility for TVA
25 was lost by allowing that lake to reach full pool
1 while all the other lakes were at a lower level. 60

2 Everyone watches the web site, and it's just a lot of
3 people are saying that's just another example of TVA
4 saying one thing and then doing what they want to do.

5 MR. CHUCK BACH: Good question. It's

6 a hard one to answer. Trying to look at the big
7 picture, and like I mentioned earlier, the Norris
8 watershed was the only watershed that got a big
9 rainfall in that time frame. So we fortunately were
10 able to get it up to its full pool elevation.

11 Norris also is a -- has a large amount
12 of cold water. There is a trout fishery that we try
13 to take care of below that from an aquatic habitat
14 standpoint. Cold water is good for our hydro
15 generation also.

16 So with no rain forecast and we had
17 water in Norris, we just held on to it and then
18 started using it to run out. Now, we ran probably
19 35 percent of the minimum flows out of Norris and
20 made up the rest of it out of the nine tributaries.

21 So we pulled Norris very hard to make
22 up that minimum flow and trying -- and slowly brought
23 them back into balance. I didn't bring them in like
24 that. The system is such that you just can't bring
25 it back into balance immediately.

61

1 You have to do it -- and we did it
2 slowly, I admit, but I used that water to supplement
3 and not pull the other tributaries as hard. Instead
4 of just pulling Norris right down and then pulling
5 everybody down, I just brought kind of a slow guide
6 curve, you might say.

7 MR. W. C. NELSON: In retrospect, I
8 guess, if the same situation occurred again, would
9 you do the same thing?

10 MR. CHUCK BACH: That's part of the
11 lesson learned that we're going to talk about and try
12 to make our best decision.

13 Remember, we have never been there
14 before. I am looking out in the future and there's
15 no rain in the forecast, what's the best thing to do?
16 So we made a decision to not just drop
17 Norris like this but to drop it like that, and that's
18 what we did this year.

19 COUNCIL CHAIR MR. TOM LITTLEPAGE: All
20 right. My understanding of that is the temperature
21 issue was not an insignificant issue in terms of the
22 problems you were seeing on the main stem.

23 MR. CHUCK BACH: Yes.

24 COUNCIL CHAIR MR. TOM LITTLEPAGE: So
25 having that cold water resource really was very
1 beneficial. 62

2 MR. CHUCK BACH: Very helpful, yes.
3 The aquatic habitat below Norris depends on that cold
4 water significantly.

5 COUNCIL CHAIR MR. TOM LITTLEPAGE: Any
6 other questions for Chuck?

7 Thank you, Chuck, for that
8 presentation. We certainly appreciate it.

9 I want to recognize Tom Vorholt who
10 has arrived. Welcome, we appreciate you being here.

11 We're running a little bit ahead of
12 schedule, but why don't we go ahead and take about a
13 30-minute break and reconvene here at -- what is it,
14 9:45, so 10:15, something like that?

15 (Brief recess.)

16 COUNCIL CHAIR MR. TOM LITTLEPAGE: All
17 right. We're going to go ahead and restart. As we
18 begin, again, I want to make everyone aware that we

19 have a guest amongst us. I see she's talking around.
 20 Director Susan Williams is here, who is a member of
 21 the Board of Directors, and we want to thank her for
 22 her time in coming in this morning and seeing us. We
 23 appreciate her presence today.

24 Also, Peyton has some additional
 25 information based on a question that came up earlier.

1 DFO MR. PEYTON HAIRSTON: The question⁶³
 2 was the financial impact on the loss of hydro
 3 production, was that yours, George?

4 MR. KARL DUDLEY: It was mine.

5 DFO MR. PEYTON HAIRSTON: Sorry.

6 MR. GEORGE KITCHENS: I have actually
 7 heard the number. I just can't remember it.

8 DFO MR. PEYTON HAIRSTON: It's in the
 9 \$300 million range, and that's the impact of
 10 additional purchase power, buying more coal for our
 11 fossil plants, more than obviously we anticipated.
 12 So it's in the \$300 million range.

13 COUNCIL CHAIR MR. TOM LITTLEPAGE: All
 14 right. Thank you for getting that for us, Peyton.

15 We want to let Ms. Williams make any
 16 remarks, if she would, to this group. And it is,
 17 again, a pleasure for her to be here today.

18 DIRECTOR SUSAN WILLIAMS: Thank you.
 19 When I have a captive audience, I will always say a
 20 few words. I really do not have a speech.

21 I just wanted to thank all of you for
 22 serving TVA in this capacity. We really do
 23 appreciate what you do and we enjoy having your
 24 input.

25 Some of you were on the Council last
 Page 50

1 year when we worked so diligently to get this new
2 land policy passed. Some of you probably like what
3 we did and some of you may not have liked what we
4 did.

5 Clearly, the public was in favor of
6 the new policy. We have had really a lot of positive
7 comments about it. People still will walk up to me
8 on the street and thank me. They are the
9 environmentalists, of course, not the developers. I
10 guess all of you were helpful in that, and we
11 appreciate your input in the comments.

12 So far it's working. Like Bridgette,
13 we haven't had too many issues come up, but I really
14 just wanted to say thank you for what you do. So on
15 behalf of TVA and the Board, we appreciate you.

16 Thanks.

17 COUNCIL CHAIR MR. TOM LITTLEPAGE: All
18 right. Thank you very much. We're going to talk
19 right now about TVA's Drought Management Plan, and
20 before we do I just want to preface it with a couple
21 of things.

22 This is what I hope is one of the more
23 significant presentations that we have seen. As we
24 get into this drought planning process, one of the
25 key issues for us to address is what is the
1 appropriate role for TVA versus the states? 65

2 Unlike the Land Management Policy
3 discussions that we, the previous Council,
4 considered, the water is owned by the states, and the
5 states have an inherent and legal right associated
6 with those individuals resource areas.

7 So determining what is the appropriate
8 role for TVA in droughts, when you have got state
9 activities associated with trying to protect the
10 resource for their individual interest and TVA's
11 system-wide interest, I think this is an area where
12 this Council can be especially helpful in providing
13 advice and recommendations.

14 We have some representatives that are
15 directly appointed by each of the member states, as
16 well as various stakeholder interest groups, and I
17 think have obvious perspectives in interest and in
18 how droughts are managed.

19 I want to encourage you to think
20 carefully. Again, refer to the discussion questions
21 in the back of your tab and look at that with regards
22 to the draft plan, and at this point it is a draft
23 plan, that TVA is proposing for us to consider or to
24 collect comments on. So I encourage you to carefully
25 think about those issues as we get ready for
1 tomorrow's session. 66

2 With that I would like to introduce
3 Gene Gibson, who I have known for a number of years
4 and has been actively involved in water supply issues
5 throughout the Valley and in helping understand
6 implications associated with such sensitive things
7 like interbasin transfers and the permitting
8 processes associated, and now as we move into what we
9 have just heard as a historical drought, how TVA can
10 better prepare to handle those kind of conflicts in
11 the future.

12 So with that -- by the way, Gene is
13 recovering from a broken ankle. So we have given him

14 permission to take a sitting position as he makes his
15 presentation.

16 MR. GENE GIBSON: Thank you, Tom. You
17 know, before I get started here, I might just tell
18 you how I sort of broke the ankle.

19 I was -- I actually had some friends
20 over for dinner one night. I was cooking steaks out
21 on the deck. I don't know, you might have seen these
22 mats, these rubber mats that everybody is using now
23 outside their front doors and back doors, sort of the
24 thick rubber mats that are pretty stiff, you know,
25 with the designs in them and so forth. My wife, she
1 had one of those out there on the deck to make sure I⁶⁷
2 always wipe my feet before I come in.

3 Anyway, I was bringing in the steaks
4 and my foot just caught the edge of that mat and just
5 rolled right off that mat, and I went right down to
6 my knees, and, you know, as it turns out I broke my
7 ankle, but I saved the steaks.

8 So I did not sacrifice the steaks. We
9 had a good time. Afterwards I gained a lot of
10 mileage from it because I told my wife, you know, I
11 said, "Honey, I have always told you I would go to
12 the mat for you."

13 And she being the witty person that
14 she is said, "Yes, and you have always said you
15 couldn't get a break, but you did."

16 So that's sort of my story, and I am
17 sticking to it.

18 Anyway, as Tom indicated, my name is
19 Gene Gibson. It's a pleasure to be able to address

20 the Council today on the subject of the Drought
21 Management Plan.

22 For the last six or seven years I have
23 actually been the manager of water supply, and my
24 primary responsibility has been dealing with the
25 numerous utilities -- water utilities that withdraw
1 water up and down the Tennessee River System. 68

2 I am also the primary interface with
3 the states as it relates to water supply and water
4 supply issues and interbasin transfers and those
5 sorts of things.

6 water supply is obviously a very
7 important subject as more than \$4 million people that
8 live within the Tennessee Valley region actually
9 depend on the Tennessee River System as their source
10 of drinking water.

11 So with that being said, I am going to
12 go to the next slide here. My presentation today is
13 basically I am going to be discussing how we actually
14 got to this point in terms of the need for a Drought
15 Management Plan, if we need one, and how we define
16 drought at TVA, what does a drought look like for TVA
17 as opposed to other entities.

18 I am going to give a brief overview of
19 the drought draft management plan that we have
20 actually developed, and then hopefully be able to
21 provide any answers to any questions that you might
22 have.

23 In terms of the background, back about
24 three or four years ago, back in 2003 and 2004, there
25 were actually a couple of ongoing activities by TVA,
1 and at least one of those were as a result of 69

2 recommendations that had been made by this Council
3 itself.

4 We actually -- that's the second one
5 that I was going to -- oops, sorry. That's the
6 second item there that I will mention.

7 The first item was the Reservoir
8 Operations Study. At that point in time we weren't
9 real sure that the ROS would be sufficient initially
10 to handle drought situations.

11 We were very confident that the ROS
12 would handle flood situations, and most of our
13 attention was played to flood-risk analysis and that
14 sort of thing. We felt like that it was good for the
15 drought, but there were a lot initial analyses that
16 had to be completed and so forth.

17 So what we did is in order to keep
18 from holding up the Reservoir Operations Study, we
19 actually said that we -- we put a commitment in there
20 that we would evaluate the need for a Drought
21 Management Plan after the actual EIS was completed.

22 The second item that was ongoing, and
23 you will see how these things kind of come together
24 in a moment, the Stewardship Council recommended that
25 TVA facilitate a Tennessee Valley Water Partnership.

1 The recommendation from the Stewardship Council was⁷⁰
2 that TVA had so much history and data in operating
3 the integrated system that TVA should actually be
4 more proactive in working with the various states in
5 managing water quantity issues.

6 TVA has obviously worked very closely
7 with the states in the past on water quality issues,

8 but the Council said that TVA should work more
9 closely with the states on water quantity issues.

10 So we actually -- it's been about
11 three or four years ago, that's when I met Tom and
12 Tom was involved from the State of Alabama. We
13 actually have a water -- Tennessee Valley Water
14 Partnership now that's composed of water supply
15 officials from the seven states.

16 We actually meet three to four times a
17 year and discuss items of mutual interest related to
18 water supply and overall water quantity issues.
19 Recognizing the kinds of controversies that happened
20 in Georgia and Alabama and Florida, is there an
21 opportunity here for TVA to sort of facilitate and
22 work more closely with the states to avoid some of
23 those type of conflicts that are occurring elsewhere?

24 So the Regional Resource Stewardship
25 Council has been in business for about -- the TVA
1 Water Supply Partnership has been in business for the 71
2 last three or four years and has been working very
3 well. At the same time, as I indicated, we committed
4 to look at the need for a Drought Management Plan.

5 Now, this slide actually shows what
6 the annual runoff variability in the Eastern Valley.
7 The Eastern valley is defined as the watershed
8 portion upstream of Chattanooga, that's the eastern
9 half of the Tennessee Valley Region.

10 When you see on the left-hand axis
11 here the percent of normal, if you looked back to all
12 of the records that we have here, and the wet years
13 are up here and the dry years are down here, you will
14 notice that there's very few of them that are

15 actually on the line which would be a normal -- what
16 we would say a normal or an average.

17 So you can see there's no -- basically
18 there's no such thing as an average year for TVA.
19 Typically it's either a wet year or a dry year to
20 some extent and to varying degrees.

21 So you can see those years back when
22 we had greater than 40 percent above normal rainfall.
23 well, it's not rainfall, it's actually runoff.
24 That's the other thing I wanted to mention, rainfall
25 is one indicator, but the runoff is actually what's
1 important to TVA because that runoff is the water⁷²
2 that actually makes its way into the reservoirs and
3 makes its way on into the main river and through the
4 system.

5 As I indicated, you have got all the
6 years here. Most times, you know, when you look at
7 the situation, you don't really know that you're into
8 a drought until you're into the drought or in many
9 cases you're actually looking back. Then
10 historically when you look back, you can see that,
11 hey, those were extremely dry years and so forth.

12 I would draw your attention to the
13 fact that the dryer drought years seem to come in
14 groups of three or more. If you look back you can
15 see what's happening back here in the '40s. There
16 were long periods of extremely dry years.

17 Then back in the '80s we had -- we
18 hear people talk about the drought of the 1980s,
19 that's when this was occurring. Then we had some
20 more right here.

21 Then you can see where we are right
 22 now. The last couple of years have been dryer years
 23 than normal, meaning that we have got less than
 24 normal runoff into the system.

25 You can sort of see where we're
 1 heading right now with this 2007 line. Obviously 73
 2 2007 is not over yet. So what happens between now
 3 and the next couple of months will determine where we
 4 wind up here, but if it continues dry -- continues to
 5 be dry, the potential is for 2007 to continue to be
 6 the drought of record as far as TVA is concerned.

7 So unfortunately while we can't
 8 predict what the future might hold, you can obviously
 9 see where we needed our Reservoir Operating Policy
 10 that Chuck referred to earlier.

11 The manner in which Chuck operates the
 12 river system, we need to have a robust operating
 13 policy that can actually minimize the overall
 14 impacts, regardless of whether you're operating in
 15 one of these wet years where you may be experiencing
 16 flooding conditions or maybe the next year when
 17 you're in an extremely dry condition and then you're
 18 managing for the drought-type situation.

19 Further analysis and modeling, you
 20 know, that we have done since the ROS has
 21 demonstrated that we can actually maintain sufficient
 22 water in storage to meet the minimum flows through a
 23 drought year.

24 And as Chuck mentioned, we're
 25 continuing to meet the minimum flows even as we
 1 speak. We continue to have some water in storage, 74
 2 albeit not as much as we would like to have. So our

3 operating policy has sort of been proven this year to
4 be robust enough to sort of manage through the highs
5 and the lows.

6 Let's talk just a little bit about a
7 drought. There are many definitions of a drought.
8 It depends on, you know, who you are or what you're
9 doing, you know. If I am spending more than I am
10 making, there's a drought in my checkbook, you know,
11 and if your agricultural interest, you know, is soil,
12 moisture, and those things, that constitutes drought.

13 When we started looking at defining
14 drought, we looked at the National Drought Index,
15 which is shown right here. Let me go back one second
16 here. The National Drought Index, which I will show
17 you in a second, Chuck also showed it to you, but for
18 TVA there's basically two things that's -- two
19 measures that we look at to define drought in the TVA
20 system as it relates to water and water supply.

21 I would like for you to keep these two
22 things in mind as I move through the presentation.
23 One is actually the system inflow, which Chuck
24 mentioned earlier, and I will also explain a little
25 bit about that, and how much is water actually coming
1 into the system. 75

2 All of that inflow is not made up just
3 by rainfall. A huge component of the water that
4 comes into the system is through groundwater. We
5 sort of talk about those things as being separate,
6 but if you will note, when you go up into the
7 mountains and it hasn't rained for a week, there's
8 still water flowing out of those mountains.

9 where is it coming from?

10 It's coming out of the groundwater.

11 So there's a large component of the water that's
12 actually in the Tennessee River System that's
13 actually made up of groundwater, the groundwater
14 contribution.

15 Now, we don't distinguish between how
16 much is groundwater and how much is rainfall. We
17 calculate what the actual inflow is and sort of back
18 calculate that, and that's the number that we use.

19 So the numbers that you're seeing here
20 is actually the inflow that we're calculating that's
21 coming into the system for rainfall or groundwater or
22 whatever. So that's one parameter, the inflow
23 parameter.

24 The other one is the tributary
25 storage. Chuck mentioned that, that our major source
1 of storage is in ten large tributary storage
2 reservoirs, and that's where we actually capture that
3 water that we actually use to maintain system
4 operations.

5 And as you can imagine, having
6 navigation as the primary purpose, you know, you have
7 to maintain from Knoxville all the way through
8 Kentucky that navigation channel there of 11 feet of
9 water.

10 You don't typically -- you don't vary
11 that very much. Otherwise, you wouldn't be able to
12 have navigation through there. If you raise it up
13 too much, you would have flooding and so forth. So
14 we operate in a fairly narrow band on the main river
15 system.

16 we use those tributary storage
17 reservoirs upstream as our source of water supply and
18 water quantity to be able to release water to
19 continue for navigation purposes and other purposes
20 within the system. So that's where the variability
21 takes place is in those tributary storage reservoirs.
22 So that's the second indicator of where we start
23 talking about a drought.

24 I think you have already seen this
25 slide. Chuck had mentioned it earlier. It's
1 actually the National Drought Monitor. It comes 77
2 out -- every Thursday it's released. It's a kind of
3 composite. A lot of discussion goes on with various
4 entities in actually developing this map, a lot of
5 inputs from the states.

6 It's actually -- these indicators are
7 basically put in on a county-by-county basis as to
8 what the situation is in any particular area within
9 the country. So you can see right now -- obviously
10 the scale is over here in terms of the intensity. It
11 goes from a D0 to D4.

12 So you can see right now that the
13 southeast, and as Tom used to say, the epicenter was
14 right in Alabama, the State of Alabama. It looks
15 like it's probably moved up right now, but epicenter
16 is probably right within the Tennessee Valley Region.

17 So if you look at what's been
18 happening in terms of drought, we're sitting right in
19 the driest area of the country at the present time.

20 So this D4 drought has continued. It
21 started down here and now it's spread up a little bit

22 to the north, and now it's spreading on over into
23 North Carolina and Virginia to a lesser extent.

24 So this is sort of the National
25 Drought Monitor that most people are focused on.

1 That's the kind of information that you will see in 78
2 the papers and so forth.

3 So we felt like it was probably a good
4 idea to sort of, you know, develop our Drought
5 Management Plan or Policy using these -- this kind of
6 indicator or using this intensity level.

7 Now, the definitions that go with
8 those intensity levels that I just showed you, you
9 can see, what does it mean to be in an exceptional
10 drought, it's kind of subjective terms, but it's
11 defined as exceptional and widespread crop and
12 pasture losses, you're experiencing exceptional fire
13 risks, you have shortages of waters in reservoirs,
14 streams, and wells, and the potential for water
15 emergencies.

16 I think if you talked to the various
17 states and the folks that are managing water
18 resources within those states, I think they will tell
19 you that that's the situation in a number of areas
20 within the Tennessee Valley at this point. So these
21 are the definitions that actually go with the
22 previous slide.

23 So we and the TVA staff, we decided to
24 adopt these same categories using D3 -- D0 through D4
25 to ensure consistency across the discussions with the 79
1 states and the federal agencies whenever we were
2 talking about drought intensity.

3 Now, this slide, again, is -- it's the
Page 62

4 slide that Chuck was showing earlier talking about
5 the inflow drought indicator, the inflow above
6 Chattanooga for 2007. You can see this median line
7 here, which means that there is as many years above
8 the line as below the line in terms of the amount of
9 inflow that we get into the system.

10 This is a cumulative weekly inflow
11 amount and thousands of CFS or whatever. So it's
12 cumulative. We start in January and we're measuring
13 how much water comes into the system inflow and we
14 track that throughout the year. So, again, you can
15 sort of see we're probably 50 percent short or over
16 50 percent short in terms of inflow getting into the
17 system.

18 Now, I have some other -- I hope in
19 your books you have a slide that shows some gray
20 areas.

21 COUNCIL CHAIR MR. TOM LITTLEPAGE: You
22 can see it.

23 MR. GENE GIBSON: It's not showing up
24 very well on the slide here, and I apologize for
25 that, but the significance of these gray areas, we
1 went in and we put these areas in to sort of define⁸⁰
2 levels, if you would, of drought.

3 For example, the area -- the
4 white area above the zero, we're likely to be in that
5 area up in here, and that's going to likely occur,
6 when you look at it statistically, one year in three
7 we're going to be somewhere up in that range.

8 The D0, we're going to be in that zone
9 maybe one year in five. A D1 zone, we're going to

10 be -- that's going to likely happen one year in ten.
11 D3, going on down to a more severe drought, that's
12 likely to occur once about every 20 years. The D3
13 drought, in terms of inflow, that's likely to occur
14 about once every 50 years or so.

15 And when you're in this area down in
16 D4, which is right sort of where we are now, that's
17 likely to happen about once every 50 to 100 years,
18 somewhere in that particular range.

19 So you can see that we're right on the
20 cusp of having the driest year of record, at least
21 within the last hundred years or so. So that's the
22 significance of those numbers there. So we're
23 experiencing in 2007 what we would likely expect to
24 see about once every 50 to 75 years or somewhere in
25 that range.

81

1 Now, this slide I am showing just
2 because -- to compare it with last year, which we
3 thought was a dry year. You know, when last year
4 occurred you will remember that we were putting out
5 press releases on what the impacts were with the
6 drought and lots of concerns and that sort of thing.
7 That was happening last year. You can see where we
8 are this year relative to that.

9 Actually, 2006 started out dry and
10 stayed in the moderate drought zone, what we
11 considered the moderate drought zone for the
12 remainder of the year. Again, even though last year
13 was a drought year, we would expect to see a year
14 like 2006 about once every five or ten years or so.
15 So you can sort of see how last year compared to this
16 year. So we are significantly dryer this particular

17 year.

18 Now, the second indicator is -- as I
19 indicated before, there are two things. One was the
20 inflow that I just sort of explained that for you.
21 Now for the second measure that's important in terms
22 of drought is storage, and there is -- the index on
23 here is we actually look at the volume of water that
24 we have stored, and that's what this is.

25 This day second feet is a volume
1 metric measure, and it's a measure of how much volume⁸²
2 we actually have stored in the tributaries. This is
3 a composite drawing for the ten major tributaries
4 where we have most of our storage. So we sum those
5 up, and this is sort of the curve that you get.

6 Now, the thing I would mention is that
7 every one of these tributary storage reservoirs have
8 a curve similar to this. So you have your own
9 operating curve for each tributary, and then we sum
10 these up and look at what's the impact on the entire
11 TVA system. So, again, this is primarily tributary
12 storage for 2007.

13 Chuck explained all of these various
14 lines here, and basically I think there's good --
15 some goods news in this particular curve, because
16 even with the record low rainfall and the runoff, we
17 have been able to store sufficient water that we have
18 been able to continue operating with our ROS policies
19 and guidelines, and the ROS policy has been
20 sufficient to allow us to manage through a near
21 record drought within the Tennessee Valley Region.

22 So as I indicated, we have done

23 additional modeling and analysis that indicates that
24 the existing ROS policy is sufficient to be able to
25 manage through a drought of record, and that's sort
1 of been proven by this curve right here. 83

2 So you can sort of see where we
3 started out, pretty close to where we wanted to start
4 out the year. As time went on it continued to be dry
5 and so forth, and we sort of started conserving water
6 here.

7 As Chuck indicated, we weren't able to
8 get up to fuel the reservoirs to where we would like
9 to have filled them. Normally to fill all the
10 reservoirs you would be up in this range. Due to no
11 rain and the minimum flow requirements and so forth,
12 we started drawing down those tributary reservoirs.

13 And as Chuck indicated, the only one
14 was Norris that we were able to get filled, and that
15 was -- a lot has to do obviously with rainfall. I
16 mean, if it doesn't rain in a particular area of the
17 valley, you're not going to fill that reservoir. So
18 for that particular sub watershed, if you will, it's
19 very pivotal on the rain in that particular area.

20 So in the case of Norris we actually
21 did get quite a bit of rain and we were able to fill
22 that reservoir. I wish the other would have been
23 true for the other reservoirs, but that was not the
24 case.

25 You can see we sort of -- we came 84
1 through it. Then after Labor Day you can sort of see
2 the yellow line right here. Obviously some of
3 minimum flows have -- the unrestricted drawdown --
4 the minimum flows have been reduced that we have to

5 release, but normally we would be pulling the
6 reservoirs down rather steeply at this point trying
7 to get them down to this level here to start next
8 year.

9 well, obviously we don't have to do
10 that at this point. We're not having to -- we're not
11 releasing tremendous amounts of water like we would
12 do in a normal year or a wet year, but we are
13 continuing to release the minimum flows that we have
14 committed to release.

15 You can sort of see that it's sort of
16 slowed down here. So this is where we like to be at
17 the beginning of the year. So we're hoping that we
18 will obviously get some rainfall in between now,
19 October, November, and December to get kind of get us
20 back into where we want to be starting the year.

21 As we move through this year and we
22 sort of looked at whether -- although, we recognized
23 we didn't need to change our Reservoir Operations
24 Policy, we did conclude that we probably needed to
25 come up with a Drought Management Plan to take -- to
1 improve communications with the states and coordinate⁸⁵
2 with stakeholders, and that sort of thing, so that we
3 sort of understood exactly what's going on from a
4 drought management point of view.

5 So even though we are robust enough to
6 handle the drought of record, we decided we needed a
7 Drought Management Plan that explains the kinds of
8 actions that TVA can take as we move through a
9 potential drought, and it's that plan that I am going
10 to be briefing you on today.

11 One good thing I will point out as
12 well is the -- as a result of the ROS and as a result
13 of the keeping those winter storage elevations higher
14 on a number of these tributary reservoirs, it really
15 benefited us this year while we're in a drought year,
16 because what happens is at the beginning of the year
17 you're starting off the year at a higher level with
18 more water in storage than would normally be the
19 case.

20 So as a result of the ROS and the
21 revision in the operating policy, we're actually
22 starting off with 20 to 30 percent more water in
23 storage than would have been the case prior to the
24 ROS being implemented.

25 Again, the key point here that I have
1 mentioned is the -- this level here, this is the ⁸⁶
2 level at which water supply intakes start becoming
3 uncovered, you know.

4 So the water supply intakes in our
5 tributary reservoirs and in the streams and so forth
6 that have been permitted, the water level has to get
7 down to this point before -- or actually below this
8 point. This is like 4 or 5 feet above the lowest
9 intake point to the water utilities throughout the
10 Tennessee valley. So that defines the worst-case
11 situation from a drought.

12 Now, let's talk just a little bit
13 about the Drought Management Plan that you have in
14 the book. The RRSC members were forwarded the
15 Drought Management Plan and another copy, I think,
16 has been placed in your books today.

17 This is basically an outline of the
Page 68

18 major sections within the Drought Management Plan. I
19 will discuss what's included in each of these very
20 briefly.

21 The point I would like to make though
22 is that the Drought Management Plan is not something
23 that takes the place of the Reservoir Operations
24 Study or it's not something that actually prescribes
25 deviations from our Reservoir Operations Study
1 operating guidelines. It's actually something that⁸⁷
2 supplements the Reservoir Operations Study and
3 guidelines.

4 So the point is that during a drought
5 we're going to continue following our ROS policies
6 and guidelines, but we'll also be following this
7 Drought Management Plan in terms of as we go through
8 the drought how we communicate and how we coordinate
9 with the states, and that sort of thing, recognizing
10 that all seven states share this resource, the water
11 resources.

12 we're all drinking and drawing out of
13 the same bucket, so to speak, throughout the
14 Tennessee Valley Region. And what happens in one
15 particular area of the valley or one particular state
16 has potential to impact other folks in other states
17 downstream and so forth. So these are basically the
18 sections that we have in the Drought Management Plan.

19 with that being said, as we indicated,
20 the Drought Management Plan was developed in
21 cooperation with the seven valley states. TVA's
22 staff worked very closely with our Tennessee Valley
23 partnership, and that's where I mentioned at the

24 beginning these sort of things kind of came together,
25 because we had the Reservoir Operations Study that
1 was ongoing and was completed. So we had a vehicle⁸⁸
2 already in place, the reservoir -- the Tennessee
3 Valley partnership was already in place.

4 So the logical place to start talking
5 about water quantity issues was with that
6 partnership. So they were very instrumental in
7 helping us develop the plan.

8 You can imagine the different
9 perspectives that you might get when you're dealing
10 with the various states and the kinds of experiences
11 they have had when you're talking about Georgia,
12 Alabama, some of the conflicts, and that sort of
13 thing.

14 The goal of the plan was actually to
15 facilitate coordination and communication and drought
16 conditions and impacts and responses while at the
17 same time recognizing the authorities and the
18 responsibilities of both TVA and the states.

19 As Tom has mentioned, we don't really
20 get into states' water rights, that sort of thing.
21 We recognize states' water rights, that it's the
22 state's responsibility to develop and use water
23 resources within the particular state, but then at
24 the same time TVA is charged with the TVA Act with
25 the integrated system operation and management of the⁸⁹
1 Tennessee River System. So we both have a role to
2 play in managing the water resources.

3 Now, under potential drought impacts,
4 obviously all of these benefit areas depend on water.
5 So you can imagine what happens when you don't have

6 enough water to go around, the kinds of potential
7 impacts that could be felt in each of these
8 particular benefit areas.

9 Obviously, if you don't have enough
10 water it could impact -- you could have lower water
11 levels in the main channel, which is this direct cost
12 impact to the barge transportation industry. They
13 are not able to load the barges as fully as they
14 would normally load the barges and there's obviously
15 an impact there. A number of those barges, TVA pays
16 for the transportation of coal to our plants.

17 So there's obviously a cost impact to
18 TVA for -- if that sort of situation happens. So you
19 wind up sort of operating on the lower end of your
20 navigation band, if you will.

21 Power generation, it kind of goes
22 without saying that obviously you're going to have
23 reduced hydro generation which is used for peaking
24 power. So if you don't have the water to put through
25 there, there's a significant impact to hydropower
1 generation. 90

2 There's also, as I think Bridgette
3 mentioned earlier or someone had mentioned earlier,
4 we have increased cooling tower usage and thermal
5 derates that if we don't have sufficient quantities
6 of cold water to pass down through the system there's
7 an impact to the power system.

8 If we have decreased water levels in
9 those tributary reservoirs, it means that the water
10 utilities that are pulling out water have to pump the
11 water up at a higher level to get to the water

12 treatment plants. They experience increased pumping
13 costs, electricity costs. When they talk to me about
14 that, I am always saying, well, thank you, we will be
15 happy to send you some more electricity, you know,
16 and that always goes over well.

17 Also increased treatment costs, water
18 treatment costs, because a lot of times the -- when
19 you're pulling from the lower levels within the
20 reservoir, the water quality to start with is not
21 that good and the folks have to spend more money on
22 chemicals to treat the water, and that sort of thing.

23 Obviously the water quality is
24 impacted. We can see how -- particularly the --
25 that's what happened this year, it's one thing to
1 have the drought and it's another thing to have a 91
2 drought combined with a heat wave, and that's sort of
3 what we had this year.

4 We were already experiencing a very
5 dry period within the TVA region, but then all of a
6 sudden this heat wave came upon us as well.
7 Coupling, you know, those 100 degree days or 25 or 30
8 days in the 90's, and that sort of thing, where TVA
9 was breaking power demands and power records, it puts
10 a double strain on the TVA system, if you will.

11 The water quality issues here, you can
12 see the situation, with higher water temperatures
13 from the heat wave and then the aquatic plant growth,
14 and obviously that's kind of a mixed bag, some
15 people, like the fishermen, a lot of times like more
16 weeds and plants, and obviously the recreational
17 entities -- other recreational entities don't like
18 the weeds. So that's a mixed bag.

19 Obviously, the recreation suffered
20 throughout the Tennessee Valley Region. In many
21 cases we actually -- folks were not able to have boat
22 access or marinas were actually high and dry, so to
23 speak, on a lot of the tributaries. So those are the
24 kinds of impacts that could be felt on the system.

25 Obviously, the last one, the aquatic⁹²
1 environment, you do see some reduced aquatic habitat
2 and some increased mortality of various species of
3 aquatic life. So you can see the impacts of the
4 drought. It has a negative impact on all --
5 potentially a negative impact on all of these areas.

6 Now, we felt like that we needed the
7 states and TVA felt like that we sort of needed to
8 divide a drought up into particular phases, and is
9 there some way to look at the water inflow and amount
10 of water in storage as well as the national index and
11 sort of determine what situation that we're in and at
12 what point are the triggers to maybe take additional
13 actions?

14 So what we decided to do was we said,
15 let's develop these phases of a drought. We sort of
16 divided up into a watch phase, which obviously is
17 abnormally dry trends looking at what's the immediate
18 past and that sort of thing in terms of precipitation
19 and runoff.

20 We then look at the criteria that we
21 would use for determining the drought phase. Then we
22 would outline the kinds of actions that TVA would be
23 taking in each of these phases. So you can sort of
24 see the different phases now.

25 We said watch and precautionary. 93

1 Obviously, that continues on into the prolonged
2 period below normal rainfall. Typically you would be
3 in one of those D0 or D1 areas that I was showing you
4 on the previous slide.

5 I guess I forgot to point out the gray
6 areas on the tributary storage, but it was the gray
7 areas on the tributary storage numbers, the same
8 percentages would occur on that as well, the one year
9 in three, the five, and 20 and so forth that match
10 the ones that I had mentioned earlier on the
11 inflowing.

12 Then action phase is when we said we
13 would get into a D2 to sort of a D4 phase. Then the
14 emergency phase would actually happen when we get
15 into a situation where we just don't have enough
16 water to maintain both minimum reservoir releases and
17 operating elevations.

18 As I indicated, you know, you pull the
19 reservoirs down and you have got the intakes here at
20 some minimum elevation and we're releasing those
21 minimum flows, if you get to a point to where you can
22 no longer -- you have got to make a choice, you
23 continue with those minimum flow releases and drain
24 and drain and drain the reservoir down and continuing
25 to come down, what do you do when you get to that 94
1 point where you're getting ready to expose your water
2 supply intakes?

3 Do you continue releasing that minimum
4 flow that you said you would do and possibly expose
5 those water supply intakes to the tune of, like I
6 indicated, there's 4 million people depending on

7 that, the river system for those their source of
8 drinking water, and the potential impacts to the
9 health and safety of the public's water that's coming
10 out of the system or do you cut back on your minimum
11 flows?

12 So that's the stage that we consider
13 the emergency phase when we start getting close to
14 that point where you have to decide on whether to
15 sacrifice aquatic habitat and minimum flows
16 downstream or the health and safety of the public
17 having the water intakes exposed.

18 Now, the operating policy that we have
19 established says that we will go on down to that
20 point, and when you get to that level TVA will not
21 drop below that minimum reservoir elevation, and at
22 that time we will only pass what comes in. So it
23 basically becomes a run-of-the-river type situation.

24 The amount of rainfall or runoff that
25 we get that's all that we pass, but we maintain that
1 reservoir elevation steady in order to protect the⁹⁵
2 water supply intakes throughout the Tennessee Valley
3 area.

4 Then obviously after -- hopefully
5 after the emergency phase is through you get into a
6 recovery phase, which is above normal and prolonged
7 periods of rain and runoff sufficient to hopefully
8 mediate the impacts of the drought.

9 Now, each of these phases, I mentioned
10 the first one was a watch phase, and the primary
11 thing that TVA is sort of doing in that sort of phase
12 is basically just monitoring the drought conditions

13 and working with the forecasters to forecast the
14 long-term implications.

15 what happened last year, is this thing
16 going to continue or what are we anticipating to
17 happen in the future, that sort of thing, and at the
18 same time we're sort of getting ready, if you will,
19 in case this thing sort of worsens.

20 The next phase is basically what we
21 would consider the precautionary phase. If you look
22 at what's happening in this last year, that's when we
23 are actually getting to into a mode of, hey, maybe we
24 better start -- this is not going to be a normal
25 year, maybe we should start conserving water using
1 what system flexibility that we have to be able to 96
2 conserve water and at the same time not putting the
3 public at risk for a flood risk but recognizing that
4 this is likely to be a dry year and a continuing
5 drought situation. So let's preserve as much water
6 as we can in the system. Obviously, we have been
7 doing these other things as indicated in the Drought
8 Management Plan.

9 The action phase, we have sort of
10 defined that one as when we actually activate the
11 Tennessee Valley Partnership Drought Committee, and
12 it's at that point that we say, hey, the seven states
13 collectively, along with TVA and others, we need to
14 be sitting down and talking about this on a weekly or
15 biweekly basis on what's happening and what are the
16 implications to the TVA system so that the states
17 understand what we're doing. At the same time the
18 states contribute information on what's happening and
19 what they're seeing in terms of forecast and what

20 kinds of contacts are they getting from their
21 constituents within their state within the Tennessee
22 Valley. So it's a sharing of information basically.

23 We actually activate that with the
24 drought committee being facilitated by TVA. The
25 states all participate in that. The National Weather
1 Service, we have them involved. The USGS and the 97
2 others have participated in that as well.

3 So we meet -- not meet, we have a
4 teleconference every two weeks. We have a formal
5 process that we go through. We document what
6 everyone said and the presentations that have been
7 made and that all goes into a file. We use that
8 for -- we are continuing to keep track of this for
9 lessons learned as we come through this drought. So
10 that's -- these are the kinds of things that we do in
11 terms of the action phase.

12 We also -- we developed a database of
13 all the water intake users along the Tennessee River
14 system. We actually have a contact -- an email
15 contact name, address, emergency contacts throughout
16 the whole Tennessee 40,000-square mile basin there.
17 Everybody that pulls water out of the Tennessee
18 River, we have that. So when we're getting any kind
19 of problems in any particular area, we can
20 communicate with those folks.

21 Now we're issuing water supply updates
22 to those folks explaining what's going on, again,
23 trying to further the communication so they
24 understand what's happening during this drought and
25 telling them who they can contact within TVA if they

1 have additional questions on water flows and
2 reservoir levels, and that sort of thing.

3 We also activate a TVA team, and
4 that's sort of overseen by Chuck and his folks, where
5 we actually pull folks from all the different
6 resource areas and we meet weekly to look at what the
7 potential impacts are on all of these different
8 areas, navigation, power, water supply, water
9 quality, and that sort of thing, what's happening if
10 we operate the river system through this drought,
11 what are the potential impacts that are occurring?

12 So we have representatives from all of
13 the different parts of TVA. We come in and we meet
14 once a week and we discuss the impacts of the ongoing
15 drought. So that's a team that's also activated.

16 We also -- as we will activate the
17 Drought Communications Plan, and I will mention that
18 more in just a minute, what the Drought Communication
19 Plan is going to be, but we sort of do all of these
20 things in the action phase.

21 As I indicated, the last phase before
22 recovery would be the emergency phase. While that's
23 happening obviously everybody is scrambling around
24 trying to -- assessing the potential impacts. We
25 would obviously be meeting with the key agencies and
1 the stakeholders to discuss the potential impacts. 99

2 The third item here I would mention is
3 that in the emergency phase, in other words, when
4 we're getting down to that point to where the water
5 supply intakes are becoming threatened, we would
6 reaffirm and activate the operational drought parties
7 that were established in '88.

what that was, back in 1988 the drought back in that period, the governors appointed folks to a TVA Drought Task Force and they met and actually presented to the TVA Board a change in priorities, that obviously the TVA would operate for navigation or for flood control and other purposes, but in the case of a drought it was decided that the operating priority should first be water supply.

So at that point in time, the No. 1 priority was to protect the health and safety of the public. So do not let the water intakes become exposed. So that's the No. 1 priority.

The second priority was water quality, try to protect the aquatic habitat downstream, particularly if you have endangered and threatened species of biodiversity downstream. And then the third would be navigation and so forth.

So what we are doing in the emergency phase is, again, get back with the states and reaffirm that this is indeed the priorities that we want to be working to, and obviously we would be notifying the key water utilities and the other stakeholders of the situation that we're in and carrying out those particular functions.

Then obviously last but -- and hopefully what we all look forward to is actually getting back to a normal operating mode. So in the recovery phase that would be defined as when we're restoring normal operating priorities. We would be doing these functions that I have sort of listed here.

14 We have talked about lessons learned,
15 conducting debriefings of the drought operation, what
16 did we do, what should we have done better, what
17 could we have done better, how do we communicate with
18 everyone that we communicated with, should we have
19 done a better job, and so forth, and at the same time
20 archiving and collecting all of the data that we
21 collected as a result of the ongoing drought so that
22 that information can be put into the next drought
23 that we have. Then obviously the staff, we all go
24 back to sort of our normal job functions at that
25 point in time.

1 So if you look at where we were this¹⁰¹
2 year, you can see that basically this is what we did.
3 We were basically in the watch phase, and this was
4 obviously put on after the fact, but the -- in
5 accordance with the Drought Management Plan, the
6 watch phase kind of came in here as we were -- we
7 said, uh-oh, we're kind of starting to have a dry
8 year here, and then all of a sudden we sort of got
9 some rain.

10 Normally we would have pulled this
11 back down, but because of what had happened in our
12 most recent history back here in the previous year,
13 we said, hey, this is -- we could be in for another
14 year of this drought.

15 So TVA sort of entered into a
16 conservation mode. We were conserving water there,
17 to the extent that we could, in preparation or
18 assuming that it would still be another drought year.

19 Then the precautionary phase ended
20 basically when we saw that there were not -- we were

21 crossing over the system minimum operating guidelines
22 up here. We said, hey, we're not going to be able to
23 fill the reservoirs this year. We probably need to
24 activate the state drought committee with the state
25 partnership, which we did back here in the April and
1 May time frame, and it's continuing and it's ongoing¹⁰²
2 even now as we speak. So we have been in the action
3 phase.

4 You can sort of see from a storage
5 point of view we're still in a D3 here, and we expect
6 this action phase to continue on out here.

7 And as far as when we enter the
8 recovery phase, we don't know. It just depends on
9 whenever it starts raining and we're able to recover,
10 and that would be the recovery phase hopefully of the
11 drought. But again, the level that -- this is the
12 level down here that -- the BG3 line is really the
13 bad line that we're concerned with.

14 In terms of the types of
15 communications, as I mentioned earlier, in parallel
16 with the Drought Management Plan we're actually
17 developing a Drought Communication Plan. So it's
18 sort of going to be two different things.

19 One, the Drought Management Plan sort
20 of indicates how we coordinate and work with the
21 states and communicate. Then we're also going to
22 develop a Drought Communications Plan that will lay
23 out the specifics of how the communications are to be
24 handled during a drought during each of those phases.

25 So if we're in a precautionary phase
1 or the action phase, the way we communicate, we're¹⁰³

2 going to be pulling that off the shelf saying these
3 are the things that we're going to be doing and who
4 we're going to be communicating with and how we're
5 going to be communicating, what kind of news releases
6 we're putting out, how we're going to be coordinating
7 with the National Weather Service so we're all saying
8 the same sort of thing, and when we talk about the
9 type of drought we're in we are putting out the same
10 information.

11 In addition, you know, the informal
12 communications with the states and various
13 stakeholders, we're also holding, as I mentioned,
14 biweekly conference calls, those are the kinds of
15 things that we do.

16 Tom can tell you how he thinks those
17 things are working, as he's been the primary player
18 on those for the State of Alabama.

19 At the same time, TVA also sits in on
20 the various state drought test courses. Tom
21 obviously has one for the entire State of Alabama,
22 and TVA is a member of that, and a member of various
23 other states that have those established. We
24 participate in those and provide information from the
25 Tennessee Valley perspective.

1 And as I indicated previously, we have¹⁰⁴
2 also issued electronic updates to all the municipal
3 and industrial water intake owners on what actions
4 that they can take and what should be expected in the
5 future.

6 So with that, I will be happy to
7 answer any questions, if I can, that you might have
8 before lunch.

9 COUNCIL CHAIR MR. TOM LITTLEPAGE: All
10 right. Again, I would encourage you to note that in
11 the section just after Gene's presentation is an
12 actual copy of the Drought Management Plan for your
13 references.

14 Jeff.

15 MR. JEFF DURNIAC: It would be very
16 helpful to see a copy of that 1988 operational draft
17 priorities document or a list of those priorities.

18 MR. GENE GIBSON: We can do that.

19 MR. JEFF DURNIAC: We're all hopeful
20 of recovery, but if you have to deal with the
21 emergency phase, that's where those trade-offs would
22 happen.

23 COUNCIL CHAIR MR. TOM LITTLEPAGE: All
24 right. Russell.

25 MR. RUSSELL TOWNSEND: Yes. I was 105
1 wondering if there is data concerning what the
2 routine condition assessments are for the response
3 actions, the management response actions.

4 Is it shaded as part of the, I guess,
5 TVA policy somewhere, because I didn't see it in the
6 draft plan, what those -- what exactly those
7 condition assessments are and what they consist of
8 and who carries them out?

9 MR. GENE GIBSON: Well, I think the --

10 COUNCIL CHAIR MR. TOM LITTLEPAGE: I'm
11 not -- when you say condition assessments, relative
12 to TVA facilities or operations?

13 MR. RUSSELL TOWNSEND: Yes. Like, for
14 instance, on response actions on the precautionary

15 phase situation, these are things that TVA is going
16 to do, it says, they are going to activate routine
17 condition assessments.

18 well, you know, here on the watch
19 phase we have got initiate preliminary assessments,
20 what are those assessments and who carries them out?

21
22 MR. GENE GIBSON: Oh, I see. You
23 know, what we're doing is we're constantly doing
24 modeling analyses, and so forth, when we're in those
25 particular phases of doing what-if analysis, and that
1 sort of thing. 106

2 so what happens is doing things like
3 how many days of water -- if we get no more rain,
4 worse-case scenario, how much water do we have left
5 in the system, we're constantly doing some of those
6 types of analyses and using that data internally.

7 we're doing that as well as, like I
8 mentioned earlier too, about the -- once we activate
9 the -- what we call ROCOT team, we're constantly
10 looking at potential impacts on each of these
11 resource areas and trying to decide if there are
12 additional measurements and things we should be
13 doing.

14 As Bridgette indicated earlier, we
15 actually had -- we came up with some things that we
16 felt like we needed to do. Many of those things we
17 do in concert with communicating with the states,
18 TWRA or Fish & Wildlife Service where we're looking
19 at, for example, what's happening with dissolved
20 oxygen content in the river system when we may make
21 some modifications to what we're normally doing.

22 I know this year we did, because we
23 were concerned about the impacts on dissolved oxygen,
24 we actually started taking some additional
25 measurements in certain locations to ensure that we
1 weren't negatively impacting aquatic species, and 107
2 that sort of thing. So there's a lot of things that
3 are going on in each of these particular areas.

4 I'm not sure if I answered
5 your question.

6 MR. RUSSELL TOWNSEND: I think so.
7 Are those assessment strategies or assessment actions
8 recorded as part of the Draft Management Plan so that
9 when this management team moves on somebody else
10 pulls out the Draft Management Plan and says, oh,
11 we're supposed to be checking oxygen.

12 MR. GENE GIBSON: Oh, I see. The
13 answer to that is yes. That's what I indicated
14 before, we're making sure that we're capturing all
15 the data that we can as we move through this drought
16 such that when I am gone soon, whoever takes my place
17 or whoever comes in behind us, they will be able to
18 look at that data and say, this is what happened back
19 in 2006 or 2007 and look at the actions that we were
20 required to take then and build on that, as well as
21 doing the lessons learned analysis, and we haven't
22 done that yet.

23 Even on the state partnership, that's
24 one of the go-do's that we have for the seven states
25 is as we collectively move through this drought, what
1 have we learned collectively that we need to be 108
2 doing?

3 Are there lessons that have been
4 taking place in one state that needs to be
5 transferred to another state?

6 I mean, you know, nobody worries about
7 a drought until you're in it. Once it rains, it's
8 over, you know. So trying to get any kind of policy
9 or legislation through a particular state is very
10 difficult.

11 If there are things going on in
12 Tennessee or Alabama, we have been sharing that and
13 documenting that. So we hope to be able to come out
14 with a lessons learned document or report or
15 something as we move through this thing.

16 COUNCIL CHAIR MR. TOM LITTLEPAGE: All
17 right. Bruce.

18 MR. BRUCE SHUPP: How close -- given
19 the conditions remaining the same, how close are you
20 to the emergency phase right now?

21 MR. GENE GIBSON: Well, obviously the
22 emergency phase is going to be defined by -- we're
23 still well into the D3 mode. I guess when September
24 rolled around and we were able to reduce a lot of our
25 minimum flows, you know, you saw that curve sort
1 of -- we knew that was going to happen because we 109
2 could make it through after Labor Day, for example,
3 and that the curve would start turning down.

4 We feel like -- I shouldn't say that
5 the worst is over, but for the summer aspects when
6 you're trying to manage through this, this is the
7 time that we would normally be bringing the
8 reservoirs down anyway.

9 So if you look at the -- if you look

10 at the amount of the elevations with respect to
11 normal, the elevations are getting closer to normal
12 now than they were previously this summer because our
13 normal operating curve is coming out.

14 So your amount of water you have in
15 storage is sort of here. When it was up here, we
16 were saying, hey, we're 50 feet below normal. So now
17 the normal curve would have been drawing down to
18 here, so instead of 50 feet below normal, maybe we're
19 25 below normal, as an example. So as we enter to --
20 a lot is going to depend on what happens between now
21 and December and January.

22 The worse-case scenario obviously is
23 if it doesn't rain between now and the -- normally
24 November is one of our -- I think one of our
25 wettest -- we usually get a lot of rain in November,
1 but if it doesn't rain in November and doesn't rain¹¹⁰
2 in December, we're sort of down at this point, and if
3 it doesn't rain in January, February, March, then
4 obviously we could be really starting to worry about
5 this coming next spring.

6 If we had to -- when we would normally
7 enter the year up there at that point I showed you on
8 the curve, a lot -- we will know a lot more in the
9 next few months, let's put it that way, on how the
10 winter is going to balance out.

11 I hope I answered your question.

12 MR. BRUCE SHUPP: I guess the other
13 part of it is, given the current conditions, if they
14 continue, when will main stem impacts become visible
15 to the public?

16 MR. GENE GIBSON: I don't know. I
17 don't think I know the answer to that. Main stem?

18 MR. BRUCE SHUPP: Yeah. I mean, you
19 have no tributary water left to mitigate any flows in
20 the main stem, when you will begin seeing more
21 intensive barge traffic impacts and water intake
22 impacts on the main stem?

23 MR. GENE GIBSON: Well, I think what
24 we would be doing is obviously the same criteria
25 would be on the main stem as on the tributaries. So
1 we're going to hold -- we're going to hold the main ¹¹¹
2 stem. You have to hold the main stem pretty close to
3 where it is in order to protect the water supply. We
4 just don't vary those very much.

5 We may drop it down so that we're on
6 sort of the low end of that. Obviously, we did a
7 little bit of that this year. We work closely with
8 the Corps on what is happening on the Cumberland with
9 the same sort of thing.

10 The key indicator though is the
11 tributary storage, you know, and that's because as
12 long as you have got water in storage we're going to
13 continue to maintain enough flow to maintain
14 navigation.

15 Now, obviously there are things that
16 can be done, you know, to minimize the usage of
17 water. For example, mandatory water restrictions.
18 The water that flows through the locks, for example,
19 you know, we talked about that potential with the
20 Corps and others, that if we got to that point where
21 we sat down and said, okay, we're only going to allow
22 lockages a certain number per day or whatever or

23 we're only going to allow lockages when they are
24 full.

25 whereas, now if a boat comes through
1 it opens up and there's 30 millions of water going ¹¹²
2 down through the lock, and that sort of thing. So
3 there's a whole myriad of things like that that would
4 likely take place if and when we start getting closer
5 to that emergency phase.

6 COUNCIL CHAIR MR. TOM LITTLEPAGE: All
7 right. Wayne, did you have something you wanted to
8 add to that?

9 MR. WAYNE POPPE: Yeah. I just
10 wanted to make sure and clarify your question,
11 impacts in general on the main stem?

12 I think there's a few things that you
13 have got to take into consideration, but remember, on
14 the main stem too, you know, right now you -- we
15 manage where you have that 11-foot channel for a
16 9-foot draft, you know, it's commonplace when you get
17 into low flow years that you don't full load barges.

18 So, you know, in working with the
19 navigation industry, you will get into situations
20 where you will only load down to maybe an 8 foot or a
21 7 and 1/2 foot. So, yeah, you start seeing some
22 impacts gradually, but it's not an all or none, if
23 that's what you're asking.

24 MR. BRUCE SHUPP: Well, I think I was
25 trying to get at, at what point do major water intake
1 problems occur on the main stem? ¹¹³

2 MR. WAYNE POPPE: Intake problems
3 themselves?

4 MR. BRUCE SHUPP: Yeah, for water
5 supply for both human and industrial purposes.

6 MR. WAYNE POPPE: I don't know that
7 it's so much a level issue. At that point it becomes
8 a flow, 7Q10 issue is what, I think, you're getting
9 to there.

10 I guess I would ask one of our state
11 folks to -- I mean, all of the permits are based on
12 the 7Q10 issues in general, I think, generally we
13 call that.

14 Now, what's the absolute flow on the
15 TVA system? I don't know the answer to that, not off
16 the top of my head. We can check on that to see what
17 that would look like.

18 COUNCIL CHAIR MR. TOM LITTLEPAGE: All
19 right. Does that answer your question?

20 MR. BRUCE SHUPP: Partially. I am
21 still trying to get, you know, are we getting to the
22 point later in the year where some municipal water
23 plant will be violating 7Q10 or will there be
24 situations where industry will have to curtail its
25 withdrawal because of flow situations or that its
1 discharge will not be able to meet minimum standards?¹¹⁴

2 MR. WAYNE POPPE: Maybe another way to
3 answer that is how long can we meet the minimum flow
4 commitments we have, I guess is the way we would look
5 at that, and I don't anticipate us having an issue
6 with that at this point.

7 Chuck, if you need to add the --

8 MR. CHUCK BACH: If I understand your
9 question, it's when are we going to reach balancing
10 guide three?

11 MR. BRUCE SHUPP: Right, I guess
12 that's the easiest way to put it.

13 MR. CHUCK BACH: And that's a hard
14 thing to answer obviously because there's so many
15 parameters that come in. We're a long way from it
16 right now. We're not going to reach it this calendar
17 year. It would be next calendar year. It's
18 depending on what happens between now and then.

19 So if we stay in the no-rain scenario,
20 of course, we would be watching it and you would see
21 the curve slowly go down. We will have a much better
22 estimate of when that would occur probably in the
23 December and January time frame if we stay in the
24 no-rain scenario.

25 MR. BRUCE SHUPP: That's an important
1 answer, Chuck, because my sense is that the public¹¹⁵
2 isn't prepared for the severity of the sacrifices
3 that we would have to incur if you reach that level.
4 I don't think the public is aware that's coming.

5 They might think they might not be
6 able to water their grass, but to think there may be
7 something happening like a plant shutdown or layoffs
8 or something that would be caught, you know, I don't
9 think anybody is ready for that yet in the valley, at
10 least to my knowledge they're not.

11 COUNCIL CHAIR MR. TOM LITTLEPAGE: And
12 one of the direct benefits that Gene has alluded to
13 with the process that's in place, as well in place in
14 several of the states, is the idea of bringing
15 experts together on determining a reasonable
16 short-term forecast.

24 about yesterday to some of you-all, we will actually
25 decide on criticality of the erosion where we need to
1 actually go in and do our stabilization work. So we¹¹⁷
2 set aside part of stewardship funds for actually
3 doing that.

4 we have the flexibility that if during
5 the year we discover something that because of lower
6 flows or because of exposed banks that we come up
7 with something, then we can shift our priorities
8 fairly quickly and our folks can readily get people
9 in there quickly to stabilize the site and work with
10 you-all and the other tribes to make sure we
11 understand, you know, is that the appropriate
12 measure.

13 COUNCIL CHAIR MR. TOM LITTLEPAGE: All
14 right. Glen.

15 MS. BRIDGETTE ELLIS: Just as we would
16 under high flow conditions, it's very similar.

17 COUNCIL CHAIR MR. TOM LITTLEPAGE: All
18 right. Thanks, Bridgette.

19 Glen.

20 MR. GLEN BIBBINS: Going back to
21 Chuck's presentation and looking at the average flow
22 at Chickamauga, the minimum flows, it drops from
23 25,000 CFS on September 2nd to 10,000 on the 9th,
24 could you explain some of the parameters that allowed
25 the minimum flows to drop by that much?

1 COUNCIL CHAIR MR. TOM LITTLEPAGE: Do¹¹⁸
2 you want to take that?

3 MR. GENE GIBSON: No. I will let
4 Chuck.

5 MR. CHUCK BACH: As part of the EIS
6 that was developed in 2004, there were minimum flows
7 set all up and down the valley. If we look at all of
8 those minimum flows, based on that we decide how much
9 flow we need to meet those requirements, and they
10 change every month for multiple places up and down
11 the river. So we're constantly changing those.

12 Currently, for example, Kentucky's
13 minimum flow is 12,000 CFS on an average -- daily
14 average and that -- after October it changes again.
15 So we look at all of those minimum flows up and down
16 the valley and that's how we make our decisions.

17 MR. GLEN BIBBINS: What goes into
18 planning the minimum flows? What's underlying that,
19 cooling, navigation?

20 MR. CHUCK BACH: All of those things.
21 What you need to maintain aquatic habitat, all of
22 those parameters go into deciding what those minimum
23 flows are.

24 COUNCIL CHAIR MR. TOM LITTLEPAGE: All
25 right. Did that answer your question?

119

1 MR. GLEN BIBBINS: Sort of.

2 COUNCIL CHAIR MR. TOM LITTLEPAGE: All
3 right. Sort of kind of.

4 Kenny, did you have a question?

5 MR. KENNETH DARNELL: Just a comment.
6 First this morning, the first thing I saw when I
7 turned on the news is there was a news report from
8 someone out on one of the reservoirs, and they had
9 actually found an old foundation out there they were
10 reporting on.

11 So I can't imagine that really helps

12 your efforts to -- you know, people will be out there
13 now looking for artifacts and old foundations and
14 things.

15 In '88 we had the drought years, what
16 happened to that plan? Was that plan not
17 comprehensive for some reason or another?

18 You would think with the history that
19 TVA has that there's a good, comprehensive Drought
20 Management Plan that would already be in place.

21 MR. GENE GIBSON: Well, what happened
22 though is -- actually, the same sort of thing
23 happened in those other situations where you have the
24 drought and, you know, when you're in a drought
25 everybody gets excited and they all come together and
1 decide da, da, da. 120

2 MR. KENNETH DARNELL: If they get
3 excited long enough, then the drought will be over
4 and then nothing gets done pretty much?

5 MR. GENE GIBSON: Well, to some extent
6 that's what happens, and that's what we're trying not
7 to do this time. As we go through this and working
8 with the states is sort of -- I mean, like we had to
9 go back and pull out all of those documents from
10 1988. I mean, you can imagine, that's 20 years ago.

11 So a lot of the folks that were
12 actually involved back then are no longer with TVA.
13 Unfortunately some of the old-timers, even older than
14 me, knew where some of those records were and they
15 were actually able to pull out that stuff and the
16 correspondence that was going on back then.
17 Obviously, there was a lot of hard copy stuff because

18 there was not electronic stuff.

19 So, yeah, we're hoping to do a better
20 job this time, but obviously, again, though the
21 emphasis is if it starts -- if the fall of the next year
22 is wet or a flood year, then obviously the
23 importance -- the squeaky wheel sort of changes and
24 it's hard to get folks interested again.

25 That's, quite frankly, one of the
1 challenges that Tom mentioned earlier and is, quite ¹²¹
2 frankly, a concern that I have is, how do we keep the
3 states interested in working together.

4 MR. KENNETH DARNELL: And in these
5 drastic years like this one, they will obviously have
6 an effect on some of your calculations and levels,
7 and will that ultimately affect your operating
8 schedules and guide curves?

9 MR. GENE GIBSON: Well, it changes
10 every year. I mean, what the median is changes every
11 year. I am not sure about how the guide curves
12 are -- how often we go back and look at the guide
13 curves as a result of the historical data. Chuck or
14 somebody might be able to address that.

15 COUNCIL CHAIR MR. TOM LITTLEPAGE: All
16 right. Do you want to tackle that?

17 MR. WAYNE POPPE: If you go back --
18 put your second slide up on runoff.

19 MR. GENE GIBSON: Okay.

20 MR. WAYNE POPPE: I think it's the
21 easy way to answer your question, Ken. We have got a
22 100 year record that we based our guide curves on.
23 In that 100 year record is statistical probabilities
24 of the overs and the unders.

25 Yeah, we have got a big negative this
1 year, but when you average that in over 100 years' ¹²²
2 worth of data it doesn't -- it's a miniscule change
3 on a relative basis.

4 Again, the guide curves are put in
5 there to manage the extremes, both on the up side and
6 the low side. You take your record floods as well as
7 your record droughts and take that into consideration
8 for elevations as well as the minimum flows and how
9 much water do you have in storage or how much can you
10 parcel out in case of a drought and in the case of a
11 flood is how much can you stand coming in.

12 MR. KENNETH DARNELL: That's exactly
13 what I was looking for, whether it would be reactive
14 over a short-term or it would be dampened by the
15 long-term.

16 MR. WAYNE POPPE: I think the prudent
17 thing to do is you have got the history and you have
18 got the important information. There is patterns, at
19 least to some degree. So, you know, you manage --
20 and I think I talked about this yesterday, you manage
21 for the extremes and still take those into accounts.

22 MR. GENE GIBSON: And it's what Wayne
23 said too, when we did the Reservoir Operations Study
24 we did that to take a 30-year ahead look. So we were
25 developing what we were hoping would be a policy that
1 would be good for at least 30 years in terms of being ¹²³
2 able to forecast the kinds of changes, and that sort
3 of thing.

4 COUNCIL CHAIR MR. TOM LITTLEPAGE: All
5 right.

6 MR. GENE GIBSON: I just wanted to
7 mention one thing here about -- the comment about
8 when we were going to hit D3, you can see the concern
9 was a lot greater back in here because we said, hey,
10 if you -- what happens is if you continuously draw a
11 straight line down here, when do you run out of
12 water?

13 We were having tremendous
14 communications problems when we were in this role and
15 right around here because people were drawing a
16 straight line down here and saying, oh, gosh, in
17 November, that's when we're going to be out of water
18 if you continue on that slope, but we recognized all
19 along that we would turn up here.

20 So you can see what the difference is.
21 If you follow the slope here down to this point or if
22 you go here and you stretch out to there as to the
23 part when you get to the D3 level, and that was the
24 other point I wanted to make.

25 COUNCIL CHAIR MR. TOM LITTLEPAGE: I
1 think lunch is ready. So one last question, Bruce. 124

2 MR. BRUCE SHUPP: I have questions
3 about the communications stuff, but I think maybe
4 that would -- could hold until tomorrow in our major
5 discussions of the plan. I mean, a lot of this stuff
6 will come up again, I hope.

7 Are we going to get copies of the '88
8 priorities today?

9 COUNCIL CHAIR MR. TOM LITTLEPAGE: I
10 heard Gene say we could get that. I don't know when.

11 MR. GENE GIBSON: I didn't say today.

12 COUNCIL CHAIR MR. TOM LITTLEPAGE: No,
Page 98

13 you did not say today.

14 MR. BRUCE SHUPP: It would be good if
15 we could read it overnight.

16 MR. GENE GIBSON: I think I have it.
17 My staff is in different places right now. One is on
18 annual leave, but I will check upstairs during lunch
19 and see if I actually have a copy of that document.
20 I think I do.

21 COUNCIL CHAIR MR. TOM LITTLEPAGE: All
22 right. I guess with that, lunch is ready. Catherine
23 is pointing to the location. We're going to have
24 lunch in that room next door and will reconvene at
25 12:45.

125

1 (Lunch recess.)

2 COUNCIL CHAIR MR. TOM LITTLEPAGE: A
3 question was asked during lunch about the potential
4 release or any caveats associated with the stuff in
5 your book.

6 What I have been told, and I'm waiting
7 for TVA to tell me different, is that you're free to
8 use these presentations, that they are public
9 information and will be posted to the web site
10 following this meeting, with the exception of the
11 draft drought plan, and that's still a document
12 that's under development and TVA would ask us to hold
13 that.

14 It will be released shortly and sent
15 out for public comment as a part of their process,
16 but at this point they wanted to share that with us
17 as part of the drafting process but have asked us not
18 to distribute that.

19 Any questions on that or any issues
20 that you would like to raise?

21 Okay. I think we will move into the
22 afternoon session. Wayne is going to help facilitate
23 that, and we have got what I think is a very exciting
24 roster of folks who are going to talk to us about
25 both federal and state perspectives as it relates to
1 some of the drought issues that we have discussed 126
2 this morning.

3 Wayne, do you want to kick us off?

4 MR. WAYNE POPPE: Yeah, I'll be glad
5 to. Thank you.

6 we have got some folks coming in, and
7 if you remember yesterday when you -- for those of
8 you who are new, we talked about getting perspectives
9 of partner agencies and state agencies and how we
10 work together or don't work together.

11 So what we did is we asked
12 representatives from the Corps, GS, and some state
13 agencies to come in and talk about from their
14 perspective how are things working, what could be
15 better, what's working pretty well so that you folks
16 could get some perspective on how you think we're
17 doing all together.

18 So we have asked some folks to come
19 over and do that. I haven't heard their
20 presentations. I am sure they are all great, knowing
21 the folks that are here.

22 One thing I will say is when the
23 presenters get done, if you have some clarifying
24 questions, great, but I think we want to hold the
25 general questions for after all four presentations.

1 we will have them come up as a panel and then take
2 questions from the group, because you may hear
3 something in the second or third presentation that
4 pertains back to the first one. So we will do it
5 that way, I think.

6 Fair enough for everybody?

7 All right. The first presenter today
8 is Mike Enschede. Mike is -- I think probably the
9 easiest way to introduce Mike, I think he probably
10 has the companion job that Janet has for the Corps in
11 the Nashville District.

12 Mike has been the Chief of the
13 Operations Division since 1999 over there in
14 Nashville. He basically sees -- oversees all the
15 operational activities of the Cumberland River, much
16 like Janet would oversee the operational activities
17 here on the Tennessee River.

18 I believe there are full bios of each
19 of the presenters in the packet. Is that a true
20 statement?

21 COUNCIL CHAIR MR. TOM LITTLEPAGE: Yes.

22 MR. WAYNE POPPE: So I am not going to
23 read their full bios. If you would, Mike, you're up
24 to get us kicked off here.

25 MR. MIKE ENSCH: Very good. Thanks,
1 Wayne. As he said, I am Mike Enschede. I work with the
2 Corps of Engineers, have been with the Corps now for
3 going on 30 plus years, 33 plus years, and do things
4 very similarly to the Tennessee Valley Authority.

5 The Corps of Engineers is a broader
6 spectrum agency. We have projects on a nationwide

7 basis. We operate them out of districts. I happen
8 to work out of the Nashville District. We have about
9 41 districts here in the continental United States
10 and a few overseas.

11 Our civil works project marry up very
12 similarly to the TVA projects on the Tennessee and
13 its tributaries. So there's a lot of things that we
14 do in conjunction. I just want to take a moment and
15 just talk partnerships specifically.

16 I don't believe -- and I have
17 mentioned this to this body before, I don't believe
18 that there is a relationship, a partnership in the
19 Federal Government that is like the Corps of
20 Engineers and the Tennessee Valley Authority. We
21 have a tremendous working relationship between TVA
22 and the Nashville District.

23 If something is going on on the
24 Tennessee River, we probably know about it. If
25 something is going on on the Cumberland River, TVA
1 probably knows about it. That's not only because of¹²⁹
2 the public interchange within the basins, but it's
3 because we talk on a daily basis. There are members
4 of our staff that talk to TVA probably more than
5 members of the Chattanooga or Knoxville staff talk to
6 their folks in the field.

7 We have a very symbiotic relationship.
8 If one of us has dealt with an issue, whether it be
9 land management, water management, navigation on one
10 river, somebody on the other river has experienced
11 that issue and we can talk about it and come to some
12 type of resolution, and that's just -- that's a
13 statement I don't think very many federal agencies

14 can make.

15 My example is I have known of
16 agencies -- having worked in Washington, D.C. for a
17 bit, I have known of agencies within the same
18 departments that don't talk to each other, and I
19 won't mention Interior by name, but, you know, there
20 are some of those that it's just very difficult for
21 them to do that. So, number one, we have a great
22 working relationship.

23 I want to talk to you a bit about
24 drought management and what we're doing up on the
25 Cumberland and how we're working with TVA in
1 comparison of our drought management plans, in 130
2 comparison of operating our projects, because what we
3 do up on the Cumberland actually has a lot of impact
4 to certain TVA projects, fossil plants, distribution
5 lines, providing energy through the region.

6 Things that impact the Cumberland
7 impact the way TVA serves its basic clientele, which
8 is the generation -- the customers who receive your
9 generation capabilities.

10 The thing that has impacted us as much
11 as -- equally as much as the drought is Wolf Creek,
12 and I am going to do a -- talk with you a bit later
13 on today about Wolf Creek specifically.

14 One thing that has impacted the
15 Cumberland system, and by virtue of impacting
16 Cumberland, impacted at least the downstream portion
17 of the Tennessee system, is that we have dropped Wolf
18 Creek 43 feet to keep it at a level of 43 feet below
19 normal for the basic course of a year in order to

20 effect a dam safety repair that we must do on that
21 project.

22 what that has done, just to give you
23 the kind of broader perspective, Wolf Creek is the
24 largest storage reservoir east of the Mississippi
25 River. It has over 6 million acre feet of storage.
1 By comparison, the four districts of the Corps of 131
2 Engineers that run up and down the Ohio River, you
3 could put all 93 of those storage reservoirs in Wolf
4 Creek and have a third more capacity remaining. So
5 Wolf Creek is a huge project.

6 we have knocked that storage capacity
7 back by a third, and what that has done, given the
8 drought this year, is that has diminished our
9 capability to manage the Cumberland system as we
10 normally had done. We are scrambling for water and
11 we're not finding it.

12 we are operating our projects -- very
13 closely regulating our projects in order to minimize
14 the impacts downstream of Wolf Creek. Wolf Creek
15 flows down the Cumberland. The Cumberland enters the
16 Ohio near Paducah the same as the Tennessee.

17 The combining factor, the
18 consolidating factor that makes these projects very
19 critical is the canal that runs between Kentucky Lake
20 and Barkley. Anything we do on the Cumberland
21 impacts Kentucky. Anything that happens on Kentucky
22 impacts Barkley because there is no mechanism to
23 cease flow between those two projects.

24 So we work with TVA on a daily basis,
25 semi-daily, hourly on occasion in a water management
1 arena, in the project operation arena when it comes 132

2 to managing the water that's coming downstream.

3 A couple of points in fact that we are
4 working with TVA on, there are two major fossil
5 plants on the Cumberland River, one at Gallatin in
6 our old Hickory pool and the big one at Cumberland
7 City down on our Barkley pool.

8 Cumberland City is a major provider on
9 the fossil side of things for your system. What we
10 have had difficulty doing during this -- particularly
11 late in the summer is providing enough water down the
12 Cumberland to provide cooling water for Cumberland
13 City.

14 We manage -- we would get a call --
15 earlier in the year when we had the capability, we
16 would get a call during the morning hours, can you
17 put a little more water past Cumberland City this
18 afternoon, and we likely were able to increase the
19 flow out of Cheetum.

20 I know that we have done that on a
21 couple of occasions, kicked it up 1,000 or even 1,500
22 CFS when we had the storage capability in the
23 upstream reservoirs and were able to do that. And as
24 little as that seems, 1,000 CFS, 2,000 CFS, if we
25 could keep that water temperature below 90 degrees
1 going past Cumberland City, they were able to use 133
2 that water for cooling purposes.

3 If we weren't able to do that, then
4 there were some major impacts to Cumberland City.
5 And, you know, those impacts, I'm sure, are made
6 known through the fossil group and all about what
7 would happen if not enough water goes past there.

8 TVA is working hard to maximize the
9 benefit of the flow past Cumberland City. We're
10 working hard to try to keep the flows.

11 We are managing our upstream
12 reservoirs differently to a fashion than we have in
13 the past. We're keeping more water in Dale Hollow.
14 We're trying to keep water in J. Percy Priest to
15 augment the flow that we're missing out of Wolf
16 Creek.

17 If we had just a portion of the flow
18 out of Wolf Creek that we normally do, we probably
19 would have been able through the course of this
20 summer not to have any deratings on the lower -- on
21 those two fossil plants down below Wolf Creek, but we
22 didn't have that.

23 So we're trying to maximize the water
24 in Dale Hollow. We're changing our scenario of
25 operation to keep a little more early, partially let
1 out more during the course of the year, much the same¹³⁴
2 fashion as TVA is trying to juggle their projects to
3 keep them operational.

4 We talked about coal. We talked about
5 navigation. We maintain a 9 foot channel in the
6 Cumberland. We told shippers in a joint meeting with
7 TVA staff in June, you guys need to start to load to
8 9 feet. I repeat, you guys need to start to load to
9 9 feet. None of this 10 and 1/2 foot, none of this
10 11 foot. You will not get through Old Hickey if you
11 don't load at 9 feet because we can't put enough
12 water down there.

13 We were pulsing. We were generating
14 in the morning and putting a wave of water in the

15 river and shippers were coming upstream on that pulse
16 of water just to try keep flows up to Gallatin.

17 It was very interesting a few years
18 ago. We were going to close Old Hickory for a 30 day
19 or 21 day at that point closure just doing routine
20 lock maintenance. We made our public announcements.
21 We put out notices to navigation.

22 To be very honest with you, on the
23 operational side of things I focused very much on
24 what Janet and the River Operations Group does and
25 the navigation folks.

1 I got a call one day from somebody 135
2 from TVA Fossil, and I didn't even know there was a
3 TVA Fossil Group, but they called up and said,
4 "You're going to close Old Hickory for 21 days?"

5 I said, "Uh-huh."

6 And he said, "We have 11 days of
7 supply of coal up there."

8 And I said, "Uh-huh."

9 And he said, "You can't close Old
10 Hickory."

11 And I said, "Huh-uh."

12 You know, we started to work very well
13 with TVA at that point on the fossil groups about
14 maximizing their storage capabilities at their
15 plants. They had -- by virtue of a lot of different
16 decisions, they had started to come down on the
17 supplies that they would keep on hand.

18 So we were working with them through
19 this Old Hickory issue to make sure that they had
20 enough coal up there to operate during the course of

21 our dewatering, that they wouldn't be impacted. No
22 trains could get up there.

23 There were a lot of separate issues.
24 We actually moved our dewatering back about three
25 months, two and a half months to accommodate getting
1 that coal up there. So just another example of the ¹³⁶
2 partnership that we had.

3 You know, I hated to tell this guy
4 from another TVA organization that that really wasn't
5 my problem. He took that well, but he really, you
6 know, didn't believe that it wasn't my problem. So
7 we we're able to do those kinds of things and work
8 well with them.

9 During these drought management
10 periods, we're coming into a similar situation right
11 now of working together very closely. As a matter of
12 fact, we're going to have a conference call tomorrow
13 with our Lakes and Rivers Division, Nashville
14 District, our Louisville District, and TVA. TVA is
15 one of the decision-makers on whether or not we're
16 going to be able to shut down Kentucky lock next
17 Tuesday morning for a 24-day closure.

18 We do believe -- we have adjusted the
19 system a bit. We do believe that we have enough
20 water to keep the flow below Barkley, which is the
21 alternate route for shippers up the Cumberland and
22 through Barkley lock. We do believe that we have
23 enough water to make the 24-day closure. We have
24 plans to do only a 10-day closure if that's not the
25 case.

1 But tomorrow afternoon at 12:30 we're ¹³⁷
2 going to have a conference call with all the parties

3 involved, and TVA is one of the decision-makers with
4 us on whether we go or a no go next Tuesday morning
5 to close Kentucky lock. So we work very closely
6 hand-in-hand. We have a great working relationship.

7 I do believe that we're going to be
8 able to proceed with Kentucky dewatering because of
9 adjustments both agencies have made, but those are
10 just some of the variety of issues that drought and
11 drought management comes into play when you work with
12 two agencies -- two large water management agencies
13 like the two that we have represented by the Corps
14 and by TVA.

15 I would just offer one other comment
16 quickly about partnership. Those of you who live and
17 work around the Tennessee River are probably aware of
18 the accident that occurred last August at Wilson lock
19 where we lost the lift gate at Wilson and had to take
20 it out of service. The lock was down for almost four
21 months.

22 TVA was there the morning it happened.
23 It happened at 6:00 in the morning. I got there
24 about 8:15 from Nashville. TVA engineers from
25 Chattanooga were already starting to arrive working
1 with our engineers on what we needed to do and how we¹³⁸
2 needed to facilitate this.

3 We worked our tails off for four and a
4 half months. A TVA crew is solely responsible for
5 the repair and getting that lift gate back to
6 serviceable conditions to where we could reset it and
7 get that lock back in service in -- by the first of
8 December.

9 TVA, TVA police, TVA engineers, TVA
10 dam safety, all of those folks were out there with us
11 hand-in-hand as we worked through this problem we had
12 at Wilson.

13 The other thing that we implemented at
14 that point in time, knowing that we were going to
15 have a shipping bottle neck right then and there, we
16 put -- have a Waterway Management Plan. I don't know
17 if you have discussed those in relation to the
18 Drought Management Plan, but we have Waterway
19 Management Plans for both the Tennessee and the
20 Cumberland River where we have the -- at certain
21 conditions we will start to have weekly phone calls,
22 Coast Guard, TVA, the Corps, industry, anybody that's
23 involved with it, whether this be high water
24 conditions, an accident or a closure condition or low
25 water conditions, we have a Waterway Management Plan
1 where we can talk on a routine basis and let the 139
2 shippers know what to anticipate at different stages
3 of the river, where we're headed with potential
4 closures, potential problem areas, where we might
5 need to dredge, where we shouldn't need to dredge,
6 things like that. So we have those Waterway
7 Management Plans.

8 That was one of the most effective
9 scenarios we had in dealing with the accident at
10 Wilson last fall. We activated the Waterway
11 Management Plan. We held weekly conference calls on
12 Monday morning at 9:00. Everybody that wanted to
13 participate did participate.

14 The industry was very satisfied with
15 the response that both agencies were making. We made
Page 110

16 the best of a very bad situation right up until the
17 point that the guy who hit the main lock, as we were
18 getting ready to set that lock gate back in, hit the
19 little lock and put it out of service. I no longer
20 let them on my river. I don't know about you guys.
21 we will deal with them as time comes.

22 I do appreciate the opportunity. I
23 think this is a wonderful working relationship. I
24 hope the other panel members feel the same, but I
25 appreciate the opportunity to talk with you.

140

1 Clarifying questions?

2 COUNCIL CHAIR MR. TOM LITTLEPAGE: Any
3 quick questions for Mike?

4 Okay. Thank you, Mike.

5 MR. WAYNE POPPE: Thanks, Mike. The
6 next speaker is going to be another federal partner,
7 Scott Gain with the USGS out of Nashville. He's
8 currently the Director of the Water Science Center in
9 Tennessee, Nashville, Tennessee. He also is the
10 overall USGS representative for the State of
11 Tennessee.

12 The GS, you know, does a lot of work
13 across the country, of course, but they do a lot of
14 quality monitoring, a lot of quantity monitoring,
15 were instrumental in putting together water supply,
16 future ideas, and things like that, for all over the
17 country.

18 So, Scott, if you want to come and
19 talk to us about your presentation. Thank you.

20 MR. SCOTT GAIN: As Wayne described to
21 you, the USGS does a lot of data collection, a lot of

22 analysis, interpretation of basic information to help
23 in the planning process from water use information to
24 flows in the streams across the country.

25 Over many years we have worked with
1 TVA very closely, somewhat more closely in the past ¹⁴¹
2 years in the way that we have shared responsibility
3 for stream gauging in TVA and certainly in the
4 Tennessee River drainage basin.

5 we over those years have had a
6 relation and interaction at various levels, and I am
7 going to try to describe that a little bit to you
8 today, and then talk briefly about how we would see
9 particularly some of the issues surrounding the
10 drought and the current problems that we're all
11 facing.

12 Before I came two weeks ago I had
13 asked the people in my office and I am -- I oversee
14 about 40 to 50 people in Nashville, which is very
15 similar to what the other states in this area have
16 and the size of program and the nature of what we do,
17 but I asked those folks to give me a brief accounting
18 of who they contact in TVA in general, you know, once
19 every three, four, five times a year, something like
20 that, some sense of what kind of interaction we have
21 and what types of interactions we have.

22 I have that -- I have broken it down.
23 Let's see. Do I forward this here? Wrong thing.
24 It's got a green, blue, a purple button, the trigger
25 on the bottom. All right.

1 This is just a -- it's a brief ¹⁴²
2 accounting, a table in which I have summarized. You
3 will see a bunch of names of people that you're not

4 going to know, but what I want to show with this is
5 that there is -- at the level of the project, at the
6 level of which we are working in many different areas
7 between our agencies, quite a few people within the
8 USGS having very routine contact with people in TVA
9 regarding a wide variety of issues.

10 overall there's this slide and the
11 next one we will see. There's about 13 people in my
12 office that are routinely talking to about 21 people
13 in TVA on about 18 different topics in which we have
14 a mutual interest and an ongoing investigation.

15 we have folks dealing with the way we
16 move agreements, of course, but we have been working
17 together on watershed teams surrounding Tims Ford and
18 Guntersville, watershed teams from Pickwick and
19 wheeler, water quality databases where we share
20 information between our organizations, science teams
21 in relation to the new river, fish and benthic
22 surveys, updating water information for the Tennessee
23 River, stream gauge operations, which is probably the
24 single largest thing we do together collaboratively
25 in cooperation, and fish surveys for a number of
1 purposes. 143

2 TVA has helped us on a number of
3 studies. They are helping us with a study around a
4 highway going around Nashville. We work with them
5 occasionally on studies that require fish surveys.

6 Technical advisory committee for a
7 study -- a large study in Tennessee looking at
8 ecological flow requirements, we have a lot of
9 participation from TVA people in that. I have worked

10 a lot with Gene Gibson on things like that, the Duck
11 River Agency in which TVA has always been a very
12 close cooperator, the TVA Heritage Fish database
13 work, technical support for the question of leakage
14 under the Bear Creek Dam in North Alabama, sharing
15 information, and then planning operations for stream
16 gauging in the Tennessee River basin.

17 We have -- most of those things are
18 things I have nothing to do with. Those are ongoing
19 communication at a very collegial level. Those
20 represent probably the most important level of
21 interaction that we have.

22 Then on another level we have what we
23 might see as the kind of the institutional
24 collaboration between our organization. Some of this
25 I am directly involved in with folks at TVA. Some of
1 it is TVA folks working with our headquarters' 144
2 people.

3 For instance, I was involved in the
4 TVA ROS study a few years ago, participated in that.
5 We have always worked very closely in coordinating
6 our stream gauging programs.

7 We participate in the USGS. I
8 participate in others from our region. I participate
9 in the Tennessee Valley Water Partnership meetings.
10 We have the Tennessee Valley Water Use Study, which
11 Gene has worked on, Chuck Bohack (sic) has worked on
12 with our water use specialists over the years.

13 TVA helped with MATRAS study, which is
14 a Memphis, Arkansas, Tennessee Groundwater Regional
15 Aquifer Study, helped to coordinate some of the
16 earlier meetings and get partners together to talk

17 about the issues.

18 We have had Gene Gibson work with the
19 sub committee and water availability and quality.
20 There's just a recent report that came out that
21 involved multiple agencies, USGS, our associate
22 director for water, Bob Hurst, and a number from
23 other agencies put together, a very nice report
24 concerning the general need for information and a
25 large initiative actually around the question of
1 water availability and quality in general. 145

2 We have an endangered species
3 oversight working group that I have participated in
4 with Wayne as an ongoing effort, I think it will be
5 ten years. So we have worked together in that.

6 Then generally a whole range of water
7 supply issues within Mississippi, Alabama, and
8 Tennessee, have done studies of water demands in
9 North Mississippi and other places.

10 I also asked the folks to give me a
11 sense of their feeling about how the relationship
12 with TVA might be improved. Of course, we have
13 watched -- as an outsider have watched TVA go through
14 a change from being partially federally funded from
15 our perspective and having the support to participate
16 with us directly in a number of resource evaluations
17 to somewhat more driven by revenues from our
18 perspective. In the process we have seen some things
19 fall away.

20 Now, some of these may seem small.
21 Some staff have pointed out that we used to have
22 better information about directories, and some of

23 that may be security information. I don't know about
24 any more putting everybody's phone number on the
25 internet. Little things like that can be important
1 among agencies where you want to maintain a 146
2 connection between 20 people and 20 people.

3 Second was routine support and
4 attendance at regional and state professional
5 meetings and conferences. Because we're a science
6 agency, part of our coordination job is not just to
7 get out in the field or make a decision about what to
8 do in a drought, but actually to be talking two years
9 before we have a drought about all of the issues that
10 we need to be able to address before we have a
11 drought.

12 That has to occur in a broad meeting
13 and a broad context with participation from all the
14 people in the various states, including the federal
15 agencies, the universities.

16 what we had observed and I -- what we
17 have observed is that over the years as budgets have
18 come and gone, there have been times when TVA has
19 found it hard to support sending people to some of
20 the state-based meetings. We all -- most every state
21 in the southeast has an AWRA, American Water
22 Resources Association, meeting every year in which we
23 pull everybody together, and we have had years where
24 TVA could not participate and there were other years
25 where there was tremendous partition. We have always
1 found that participation to be very important and 147
2 essential to our overall science goals.

3 Restarting an annual joint program
4 meeting, it used to be that we also intended to have

5 once a year, and it may not be necessary to have them
6 once a year, but we used to have technical meetings
7 that involved the TVA staff at a technical level and
8 a broad array of USGS staff and Corps of Engineer
9 staff. We used to have multiple agency meetings to
10 talk about these same issues.

11 we tend not to have those anymore for
12 various reasons. I think many are just budgetary
13 changes and the way agencies deals with things.

14 we found those to be very useful, and
15 perhaps not on an annual basis, but some way to bring
16 them together to talk about technical issues within
17 the watersheds.

18 Communicating a little bit better
19 perhaps between both -- with all of our agencies
20 about the turnover staff changes. People come and
21 go. They drift through. They do a three-year stint
22 in something and then they are gone. It's important
23 for us all to maintain some kind of sense of
24 continuity in many of these issues that have
25 long-term relevance.

1 Then finally I had to participate in ¹⁴⁸
2 joint science planning. This is something that we
3 have actually been trying to do more of science
4 planning as a topic.

5 It's very effective if we're thinking
6 about some of the issues, and take drought as an
7 example, that we get out ahead of the drought a few
8 years and we start thinking about what the issues
9 will be in terms of the science needs.

10 The statistical issues about the

11 frequencies of flows, the predictability of drought,
12 we share a lot of common interest in these things.
13 These are not the kinds of things that you can study
14 the year you have a drought. It's too late.

15 So having some joint science programs
16 that look at how to better anticipate and predict how
17 to design sampling networks, monitoring networks that
18 allow us to be a bit more precise in what we're doing
19 when we have a drought would be rather important.

20 I wanted to make, because I actually
21 just started thinking about this in terms of drought,
22 I was originally in terms of my presentation thinking
23 primarily about the way that TVA and USGS relate to
24 one another.

25 As I was looking at some of the other
1 materials I think that will be presented today, one¹⁴⁹
2 of the thoughts that came to my mind and one of the
3 things that has puzzled me, when I look at the
4 drought monitoring page, for instance, and we look at
5 that routinely and we will look at the USGS stream
6 gauging phase, the drought monitoring phase will have
7 dark brown and red over a large area and then you
8 look at the USGS page and there's a bunch of green
9 and yellow and there's a few red dots, which brings
10 some very interesting and somewhat challenging
11 questions to mind.

12 There are differences in the way the
13 USGS looks at that information. We're saying that
14 basically most of these streams are not that low. If
15 you look at the page, that's what it seems to say.
16 It would seem to say that the USGS thinks we're not
17 in a drought, yet, all of the other indicators would

18 suggest that we are.

19 I guess the point that I wanted to
20 make about that is that I have had people ask, well,
21 you are out making lots of super low flow
22 measurements and you're documenting low, low flows.
23 well, we haven't had as many low, low, low flows as
24 you might expect in the midst of the drought.

25 I think for us the issue has been
1 perhaps not that the flows are lower than they have ¹⁵⁰
2 ever been, it's just that they are longer than they
3 have been in a long time.

4 So you can look at our map and you
5 will see a bunch of greens and yellows, but those
6 things have been kind of tooling along just above
7 tolerable levels for months and months and months,
8 pretty much since January in many cases.

9 So we have this kind of dichotomy
10 where you can look at our data set and see, well, it
11 doesn't look there's been a problem. Yet, when you
12 look at the contents of the reservoirs, when you
13 looked at the other things going on, there really is
14 a problem.

15 Second we have in difference in -- say
16 in terms of documenting the extremes. What we find
17 now we are facing is not so much documenting the low,
18 low, lows as doing a better job of documenting the
19 intermediate flows so that the people are trying to
20 manage that.

21 An example would be a nearby community
22 that has a standard of 40 CFS in the stream at which
23 they are supposed to stop drawing water. We

24 routinely gauge those things and measure them every
25 six weeks. If we wait six weeks and make two
1 measurements, we can easily apply a correction of 151
2 five or ten CFS out of 40 to that record.

3 If you're a manager that is relying on
4 that to turn the pump off at 40 and it goes from 42
5 one day to 32 the next because of a correction that
6 we made, it's very disconcerting. It makes it very
7 difficult to manage.

8 So from our perspective the thing that
9 we have been trying to do more of in the drought
10 condition is to try to improve the precision of some
11 of these records for users that are trying to make
12 decisions with records that are not really that
13 accurate under normal circumstance.

14 we can easily tolerate for specific
15 purposes if we're going to adjust the record by
16 20 percent in any given measurement, but that becomes
17 very intolerable as a manager.

18 I guess mainly I would say that most
19 of that information, the low flows, the frequency of
20 low flows, the statistical analysis of low flows,
21 those are things that USGS does and publishes on a
22 periodic basis, usually in cooperation with the state
23 governments individually.

24 what we generally have not done with
25 TVA is actually involve our other federal partners in
1 routine reevaluations of things like 7Q10 low flow 152
2 frequencies.

3 And bringing the information we have,
4 including other kinds of analyses of frequencies of
5 flows and trend inflows and trends in rainfall into

6 single reports that provide adequate information for
7 planning.

8 I think in terms of the drought, those
9 kinds of things would probably be relatively
10 important from our perspective. So that was it.

11 COUNCIL CHAIR MR. TOM LITTLEPAGE: Any
12 quick questions for Scott?

13 Okay. Thank you, Scott. Appreciate
14 the information.

15 MR. WAYNE POPPE: All right. We're
16 going to have a couple folks from the states come up
17 and talk now.

18 The first will be Brian Atkins. This
19 year Brian went to work at ADAKA as the director of
20 the Alabama Office of Water Resources in Montgomery.

21 I believe that's the same organization
22 you're with Tom?

23 COUNCIL CHAIR MR. TOM LITTLEPAGE: It
24 is.

25 MR. WAYNE POPPE: So we all know what
1 they do, right? And he's going to show us. So 153
2 without ado, it's your turn.

3 MR. BRIAN ATKINS: Thank you. It's a
4 pleasure to be able to come and speak to you today
5 and to speak briefly.

6 In terms of looking at, I guess, a
7 partnership between TVA and the Alabama Office of
8 Water Resources, one of the most obvious things that
9 we have, and I will spend more time on that in just a
10 few moments, is I guess a lot of interaction and
11 coordination with TVA in regards to the drought that

12 we have and that we're experiencing right now.

13 Also, I want to mention, and I really
14 wasn't prepared to go into detail about this, but
15 it's been mentioned a couple of times, and Scott
16 touched on this too just a few minutes ago, about
17 one -- another one of our partnership efforts, and
18 that's involving water use assessment and water
19 availability of the Tennessee River basin
20 specifically for Alabama.

21 That's kind of, I guess, spun off from
22 this effort of the -- I guess it's this partnership
23 between the USGS and TVA as far as the water use
24 assessment of the entire Tennessee River basin, but
25 then we started kind of a spinoff on that and looking
1 at just the Alabama part of that last year. That's¹⁵⁴
2 really a multi-agency effort between TVA, who is
3 looking at assessing the water availability, the
4 service water availability for the Tennessee River
5 basin, and our state. The geological survey of
6 Alabama is looking at the amount of groundwater
7 that's available in that area.

8 Then finally the USGS in the Tennessee
9 and in the Alabama offices are helping us with water
10 usage assessments. So we will be able to look at the
11 amount of water that's used in that area versus the
12 amount of water that's available, and that's part of
13 an overall effort that we have planned for the entire
14 state, looking at that on a regional basis until
15 that's completed for the entire state. So that's
16 really just one of, I guess, two major efforts that
17 we have with TVA.

18 As far as what the Office of water
Page 122

19 Resources or OWR does, our mission statement, I won't
20 read the whole thing, but basically the part in
21 yellow, I think, is the most key and important part;
22 that is, the Office of Water Resources' plans. We
23 coordinate help to develop and manage the State's
24 water resources. We represent the State's intrastate
25 and interstate water resource interest.

155

1 I would like to key on the planning
2 and the coordinating right now because that's
3 something that TVA has helped us out with over the
4 years, particularly this year as we have been
5 experiencing and enduring this drought which
6 really -- I guess you could say this is part of a
7 multi-year drought and you could say that that
8 started in 2006.

9 The Alabama Drought Plan that was
10 established a few years ago has a committee
11 structure. It's headed by the Alabama Drought
12 Assessment and Planning Team.

13 Then underneath that there are two
14 subcommittees that report to ADAPT, as we call it.
15 It's the Monitoring and Analysis Group to the left,
16 what's known as the MAG, and the Drought Impact Group
17 known as the DIG group.

18 Actually, these subcommittees meet
19 periodically and report to the main ADAPT group. TVA
20 and Gene Gibson's group has been helping us and been
21 very much a regular part of the MAG meetings and
22 really more of a -- we have some people who come to
23 the meetings physically in our office, but then we
24 also open it up and we have some people calling in.

25 Since we do it on a weekly basis, it just works out a
1 lot better, of course, for folks who are much more --¹⁵⁶
2 have a further distance than being local.

3 So in terms of what the -- as far as
4 our drought planning and response process and the
5 main group or the ADAPT team, the function of that is
6 really -- it acts as a senior advisory role both to
7 the Governor, Governor Bob Riley, as well as to the
8 Office of Water Resources. The membership is
9 composed of directors from key state agencies, as
10 well as some appointees by the Governor's office.

11 The role of the committee is to
12 receive input from the subcommittees, as well as OWR,
13 and then also to try to serve as the -- trying to
14 incorporate or coordinating just intergovernmental
15 responses regarding the drought as far as various
16 issues that come about, water supply issues.

17 Gene talked about intakes and so forth
18 that may be exposed due to the declining water
19 levels, and so those are things that are presented to
20 the group from time to time and trying to look at
21 those issues.

22 Also, they try to provide some
23 information for the public. We have -- the state,
24 our office, along with the ADAPT team, we provide
25 drought declarations that are kind of along the lines
1 of the drought monitor, but it's just to provide --¹⁵⁷
2 to show how the state in various regions, the
3 different levels of the drought severity, and so
4 forth, and try to get information to people about
5 things that they may need to do in terms of
6 conservation and so forth.

7 we are also making sure that water
8 systems that they may need to look -- to evaluate
9 their conditions, their water resources, how much
10 water is available, and so forth, during the drought
11 periods.

12 As far as TVA fitting into a motoring
13 and analysis group, and this is really more of a
14 technical group, so this is where Gene's group fits
15 in, Chuck Bohack usually calls in, but the main
16 purpose of this group is to over the years develop
17 some indicators of drought conditions, also looking
18 at maybe some trigger points, some thresholds to what
19 we use to maybe assign these various declaration
20 levels, gathering all the various climatic stream
21 flow meteorological data. A lot of that is so
22 accessible now over the internet.

23 I started my career with USGS back in
24 '86 during the middle of a drought. Although, I
25 started my career in the middle of a drought and then
1 I made a job change during a historical drought year,¹⁵⁸
2 there have been other droughts that occurred during
3 my career. So there's no correlation between my job
4 changes and the droughts.

5 Just from looking at '86 and '88
6 compared to 2000 and now this 2006-2007 time period,
7 there's so many more tools available now in which to
8 evaluate what kind of -- I guess the various
9 indicators of drought conditions that we're
10 experiencing. So that's very helpful in a lot of
11 ways, also to perform any data analysis that needs to
12 be done in assessing and compiling all of this

13 information and making recommendations to ADAPT based
14 on this analysis and monitoring.

15 I should say that during the drought
16 the ADAPT Group generally meets on a monthly basis.
17 The MAG Group meets on a weekly basis, sometimes
18 biweekly depending on what's going on at the time.
19 Again, Gene's group has been very much involved with
20 that and supportive of that.

21 The Drought Impact Group, it's not
22 really a technical group. It's more of assessing the
23 impacts that we're experiencing in the state, just
24 looking at both what's going on now but also trying
25 to look at what do we face later on down the road,
1 trying to develop any kind of recommendations to 159
2 mitigate those impacts.

3 It's really comprised of
4 representatives from several key sectors or
5 categories, representatives from agricultural areas,
6 industrial, recreational, domestic, and then
7 environmental areas. So trying to look at those
8 issues from a broad range of areas.

9 I won't show too many of these. This
10 is just back from -- this is May 1st. As we were
11 talking about before, like Tom said, the epicenter of
12 the drought we would like to say was in Alabama, but
13 now you have seen this already how it has just
14 expanded all throughout, including the Tennessee
15 River basin.

16 So just like most of any kind of
17 drought that we experience, this one has been a
18 learning experience. I think in some ways we were
19 better equipped in some regards for this one as

20 compared to others. I think there were some things
21 we were better equipped to see and where we were
22 headed as compared to previous years, really looking
23 back at droughts of the '80s.

24 So I think we're seeing some benefits
25 of some planning that has taken place since that
1 time. It seems like most of the work that's been 160
2 done as far as lessons learned from the droughts.

3 Then what do we need to do to try to
4 do anything about it, I guess that usually comes
5 right after the drought. You want to hit on those
6 things and take advantage of them while the iron is
7 still hot. If you kind of go through a period of
8 time where things are back to normal, then it's hard
9 to get people to start talking about and planning for
10 the next drought.

11 As Scott said, usually when you're in
12 a drought it's too late to really do anything about
13 that as far as setting up any new plans and so forth.
14 So maybe the things that we do -- we have learned
15 from this we can try to take advantage of that time
16 to do something about that or plan for the next one.

17 I looked at the discussion questions
18 before the Council for you to consider or that the
19 Council is considering. Just looking at some of
20 these, I guess as far as our partnership with TVA and
21 how I might could offer some input as far as that and
22 as far as TVA's communication strategies and so
23 forth, I want to really take this opportunity to
24 commend Gene and his group for supporting our state
25 drought planning and response process. Like I said,

1 we have these weekly conference calls or meetings on
2 a pretty regular basis.

3 Then also, as Gene alluded too, TVA
4 has also taken the initiative to hold these biweekly
5 conference calls. They are separate from the ones
6 that we have as far as our states are concerned.
7 That includes representatives and stakeholders from
8 each state, and those are very helpful as well.

9 It may seem that, well, it's just a
10 duplication of efforts for us as far as our part, but
11 in a way it's very beneficial for us because we kind
12 of see how -- what's going on regionally, and I think
13 that helps too to not only look at what's going on in
14 your state but also look at what's going on
15 regionally as well, regionally being outside the
16 boundaries of our state just to see what other people
17 are doing, maybe how we can learn from that, but also
18 as we see where a lot of the water that -- that's in
19 Alabama kind of flows in from other states.

20 So it's very helpful to see what
21 impacts are going on upstream so we can kind of get
22 an idea of what we may be facing downstream in the
23 future. So I do want to commend TVA for that.

24 One thing, and this may be a part of
25 the plan already as far as the communications plan
1 that Gene mentioned earlier, but we're also involved¹⁶²
2 on a weekly basis with conference calls in the
3 Alabama, Coosa, and Tallapoosa river basins or ACT as
4 we refer to that. That's something that the Mobile
5 District of the Army Corps of Engineers host with the
6 stakeholders from Georgia and Alabama. Also now
7 we're starting one that's -- those are every two

8 weeks, and that's with the Chattahoochee River Basin.

9 The Corps acts as a sort of a central
10 clearinghouse of information for these two basins and
11 information is disseminated to all stakeholders in
12 both the upstream and downstream users. So that
13 helps for everyone to get kind of a sense of what's
14 going on overall in the basin and what the issues are
15 from upstream to downstream. So that type of
16 coordination is very useful and helpful.

17 As far as extreme drought conditions,
18 this is something that's, like I said, has been a
19 learning experience for us. A lot of the Alabama
20 Drought Plan that we developed -- it was developed
21 after the '99, the 2000, 2001 drought that we
22 experienced.

23 So we're kind of seeing, okay, in this
24 drought period some of the things that we thought
25 were important, maybe they are not working out as far
1 as some of the indicators that we were looking at and¹⁶³
2 maybe there's some better ones now. So that's one
3 thing, we're seeing that this is really evolving
4 signs, you might say, and things change as more
5 information is available.

6 The drought monitor is something that
7 we use as a tool. We're not strictly tied to it. We
8 use it as one of the tools in evaluating where our
9 state is in -- as far as the drought goes and the
10 impacts that we're seeing.

11 If you look at what goes in to making
12 and creating this drought monitor map each week,
13 there's a lot of good information that's in there.

14 You can access that through the website. All of
15 those sorts of things, these indicators and
16 thresholds, really are important in considering and
17 then trying to look at those and trying to balance
18 the important issues, such as water supply, trying to
19 protect public health and safety with regards to
20 water supply.

21 So trying to take all of those and
22 evaluate them and balance them and try to get a good
23 handle on that is -- and then see where those -- what
24 the ramifications or different actions are involved
25 is very important.

164

1 So I just -- I would like to emphasize
2 the need for a lot of communication both for the
3 upstream and downstream users, and I think TVA can
4 play a very important part in that in their
5 coordination process and just trying to look at a
6 worst-case scenario.

7 I think, you know, sometimes we're
8 afraid to go there and think about, you know, what
9 might happen, what would happen if, you know, we
10 do -- if conditions degrade such that intakes are
11 exposed and we can't supply water to a particular
12 region, what happens then? So we hope we don't get
13 to those scenarios, but it is worth, you know,
14 looking at and trying to look at that in advance.

15 So I guess I would just -- really my
16 message is a positive one, just to encourage TVA to
17 keep doing what they're doing as far as the drought
18 goes. It's been very beneficial for us. We have a
19 good partnership with them. It really goes back
20 several years before I came on board in March. So I

21 would just like to encourage you to keep up the good
22 work.

23 COUNCIL CHAIR MR. TOM LITTLEPAGE: All
24 right. Thank you, Brian.

25 Has anybody got any questions for 165
1 Brian? Okay.

2 MR. WAYNE POPPE: Okay. We have got
3 one more speaker from the state, Nick Fielder here is
4 going to talk with us. He's assigned full-time to
5 TEMA to coordinate emergency response planning for
6 the Department of Environment and Conservation.

7 Currently, he's got a big job. He's
8 chairing the multi-agency 2007 job task force. So I
9 know you have been very busy. So Nick is going to
10 come up and talk to us. I think he's going to focus
11 on Normandy.

12 MR. NICK FIELDER: Thank you very
13 much. One of the advantages of running at the end of
14 the program is that I can skip through a few slides.

15 I have -- I talk to diverse groups
16 from farmers to scientists, et cetera, and I try to
17 explain things in just common sense language. And as
18 you know, all politics are local. Well, all water
19 crisis are local, too. All local -- and all local
20 crisis are political. So that's where I come into
21 the game.

22 I am the troubleshooter for the
23 Department of Environment and Conservation. I have
24 been with the department for 30 something years. I
25 recently changed from being the Director of 166
1 Archeology over to my current position.

2 When I was cleaning out my office to
3 move I ran across a bumper sticker to "Save the
4 Little T." I first started discussing resource
5 management with TVA in 1969 and have been doing it
6 ever since. So this is -- this is not a new position
7 for me to be in.

8 What is new -- and I am going to start
9 with some slides here. You don't need to see that.
10 These are the stream gauges that show on a daily
11 basis which ones are running what percent of the
12 normal stream flow. The red dots are low flow. You
13 see, again, this is not an isolated situation.

14 You have seen the runoff gauge. I
15 used these to brief Governor Bredesen the other day,
16 but you guys have already been briefed.

17 What I am going to talk -- I am going
18 to focus today about a specific case of cooperation
19 and collaboration and local and state partners or
20 state and TVA partnerships.

21 Normandy Dam, I think, was completed
22 in 1976 as a two dam project. There were Normandy
23 upstream on the Duck River down in Coffee County and
24 downstream was a dam called Columbia Dam. Columbia
25 Dam was to be larger and also supply water for the
1 local community. 167

2 The Columbia Dam ran into endangered
3 species, mussels, that even got to the point where
4 TVA had poured a bunch of the concrete and had not
5 bought all the property. The endangered species
6 ended up canceling the project and there's not a dam.

7 I recently met with some water supply
8 people down in that area, and I thought I would start
Page 132

9 the discussion out on a little joke, I said, "What
10 you guys need down here is a dam around Columbia and
11 you won't have any water problems," and nobody
12 laughed.

13 Normandy is a fairly small dam. It's
14 got a small reservoir behind it and a fairly small
15 drainage area, but basically there is an agreement
16 with the State of Tennessee that they release from
17 the bottom of the dam 120 -- no, 160 cubic feet per
18 second everyday to maintain water flow downstream for
19 endangered species, et cetera.

20 Right know the current inflow to
21 Normandy is 10 cubic feet per second. The Duck River
22 utility intake, which is on the lake, takes out
23 9 cubic feet per second. So basically there's no
24 water going into Normandy. The lake level is
25 dropping from the TVA or solely -- or 99 percent due
1 to the TVA release. 168

2 This is the operating guide for --
3 currently for Normandy Lake, Normandy Dam. As it's
4 been explained before, the blue line is the desired
5 guide curve. The black line here is last year. You
6 notice that they ceased to be able to maintain their
7 desired elevation of 875 about June, May and June of
8 last year, and it dropped down to the winter pool,
9 which is here.

10 So the red line, which is 2007,
11 started out here at the winter pool and did not make
12 it up to the desired level, and then about April or
13 May started going down at a considerable rate.

14 Now, there is one water system on

15 Normandy. Their intake is down here about 840. So
16 they will have -- their bottom intake, they have
17 already gone below some of their upper intake, their
18 bottom intake for their water system is down at that
19 elevation.

20 They are very concerned because of the
21 slope of this curve extending on down into here, and
22 about right here will be when they will be sucking
23 air. We're talking about -- in Gene's example we are
24 at that point where this has become an emergency. So
25 we are -- this is -- so the Duck River Association or
1 utilities are very concerned. 169

2 Now, I have been told that this curve
3 with a good 3-inch rain or whatever will start to
4 pick back up or at least level off, but right now
5 until that happens we're very concerned about
6 reaching that problem.

7 What the utilities are even more
8 concerned about is that this graph is going to come
9 down -- it's going to rebound in December and
10 January, but if it only comes back up to here, it's
11 going to start out next spring going down this way
12 and next summer there will be a serious water supply
13 problem.

14 The Duck River downstream also
15 supplies the cities of Shelbyville, Columbia,
16 Lewisburg, and several others with their flow. Right
17 now the flow in the river is 160 cubic feet per
18 second thereabouts as measured at Shelbyville, the
19 first gauge downstream from the dam.

20 TVA normally reduces the flow out of
21 the lake the first of December, and they drop it from

160 down to 120 cubic feet per second. The State got together with our various stakeholders and had a -- what I consider kind of an unprecedented meeting that we got together, there's Gene, we got the Nature Conservancy, Fish & Wildlife Service, the utility district all around the thing, water supply, state water supply, state water pollution, and all the various stakeholders that do have an interest in what goes on in the Duck River.

we came out of this meeting with the appreciation that there is a problem, and it's a serious problem. The consensus of this meeting was that the state needs to ask TVA to reduce the flow out of Normandy from the current 160 cubic feet per second down to their December level of 120 and to do that immediately, and that letter went out to -- jointly signed by the Environment and Conservation and TWRA and went out last Friday afternoon.

what we hope is that TVA will take that as a serious request, although it is -- because they do tell us that it's the State's water and they are just holding it for us, that they will start that reduction here shortly, but the -- that 120 cubic feet per second is not going to solve the problem, especially if it doesn't rain.

what we're going to have to start probably in the next month or so is some serious negotiations between the states, all the stakeholders, and TVA on what is a realistic flow for the Duck River.

Some of the studies have shown that

3 the downstream users only need 80 cubic feet per
4 second and right now 100 -- twice that amount is
5 being released. So we're going to have to start
6 saying what is that minimum flow that accommodates
7 the various interests.

8 It was hard enough to get everybody to
9 agree on just moving the 120 release up for two
10 months. So we're going to have some serious
11 negotiations ongoing to what's a more realistic flow
12 because of all of the -- because of all the interest.

13 I just wanted to point this out as a
14 concrete example of how this cooperation between TVA
15 and the various states and the stakeholders work.

16 I am mostly glad that when Gene fell
17 that he just broke his ankle and didn't hit his head
18 and suffer amnesia because as you can see in all of
19 these presentations, Gene is key to all of this and
20 we value his and his staff's participation on all the
21 discussions that we have.

22 Just one final thing getting back to
23 the local issue, everybody on the Tennessee River and
24 the Cumberland River have plenty of water for their
25 needs. We have got communities across Tennessee
1 right now that are calling us up and saying we're out¹⁷²
2 of water. So we're looking at temporary solutions,
3 and this is one of them.

4 This tractor-trailer is a water
5 filtration unit. It's a membrane technology. You
6 can pump river water in this end and get drinking
7 water out the back end. It will handle 3 million
8 gallons a day. There's several firms that make these
9 available. They are not cheap. This one, the lease

10 rate is \$35,000 a month for the first two months, and
11 then they give you a discount of \$22,000 on any month
12 after that. Nashville has set them up to supply
13 increased demands, but these trailers are in hot
14 demand right now across the southeast.

15 That is an overview from the Tennessee
16 side, and I think we're going to all come up front
17 and answer questions that you may have.

18 Thank you.

19 COUNCIL CHAIR MR. TOM LITTLEPAGE: Has
20 anybody got any quick questions?

21 what I would propose is let's take
22 about a five-minute stretch break and come back
23 together and we will assemble the panel up front and
24 have an opportunity to ask some more detailed
25 questions.

173

1 (Brief recess.)

2 COUNCIL CHAIR MR. TOM LITTLEPAGE: All
3 right. Begin to take your seats so that we can get
4 restarted. I think we have got everybody back.

5 One quick order of business that I
6 would ask your help with. Many of you, especially
7 those that have been on the Council before, know Bill
8 Tittle from Chattanooga who is recovering from open
9 heart surgery. TVA has suggested, and we fully
10 concur, we put together a get well card. I am going
11 to pass that around and ask, if you care to, to put a
12 note to Bill expressing our wishes for his recovery
13 from open heart surgery. So that will be coming
14 around. If you would, get that and forward it
15 around.

23 points to project water quality, that's essentially
24 what we're doing with our minimum flow commitments
25 and requirements that we have that we implemented,
1 actually through the Reservoir Operation Study, and¹⁷⁵
2 also those that we had previously put in place in
3 1991. Again, remember, this is 1988.

4 Maintain the sufficient depth for
5 commercial navigation, again, that's part of the ROS.
6 Then provide for hydroelectric based on availability
7 of water and priority of demands, no different than
8 what it is today.

9 In the ROS if you run into a power
10 supply alert, for instance, you then can go to
11 generation if the electrical needs are there, but it
12 has to be an official power supply alert. So I don't
13 think these things are any different than we
14 currently have in place, maybe worded a little bit
15 differently.

16 This document was pulled out as, you
17 know, here is conventional wisdom in 1988. After
18 that time then we did the Lake Improvement Plan in
19 1991. These things served as sort of a basis for us
20 to start working from in 1991 also.

21 Questions on this?

22 MR. BRUCE SHUPP: Is this all we have
23 to know about that '88 document that's cited in the
24 new plan, the draft plan?

25 MR. WAYNE POPPE: Yes, I think so.

1 MR. BRUCE SHUPP: This is it? This is¹⁷⁶
2 the guts of it?

3 MR. WAYNE POPPE: Yeah, that's the

guts of it. There was some things that we suggested, well, maybe we ought to study this and maybe we should study that, those were other things for consideration. They were not operational issues though, Bruce.

MR. BRUCE SHUPP: Okay.

COUNCIL CHAIR MR. TOM LITTLEPAGE: All right. Any other questions on that?

Thank you, Wayne, for pulling that together.

Now we're going to do a panel discussion. What I would ask is that as you have questions for our panelists, if you would begin by identifying the panelist that you would like to ask the question of and then ask that question obviously.

So who -- anybody first up? Has anybody got any questions for our panelists?

Yeah, Russell.

MR. RUSSELL TOWNSEND: I will go first again, I don't mind. I guess this is for Nick and any of the rest of the group that wants to comment.

You talk about adjusting the minimum flows. Are you providing -- is the state providing data along with USGS, U.S. Fish & Wildlife, Army Corps of Engineers and TVA to reassess those minimum flows or did they do that in the first place to establish the minimum flows they had?

MR. NICK FIELDER: What we're doing, Russell, is that we're using this opportunity, if they do the incremental drop down to 120, we have got teams of biologists, et cetera, on the river monitoring the effect of this incremental drop so

11 that we will have some data by which we can estimate
12 if we go further reductions what that would be.

13 So the short answer to your question
14 is, yes, there are ongoing studies in combination
15 with TWRA, TDEC, Geological Survey is participating,
16 several different agencies is participating, and the
17 Nature Conservancy is participating as well, because
18 it is an important ecological resource, but the
19 250,000 people that draw water out of the river are a
20 resource as well.

21 MR. RUSSELL TOWNSEND: Okay.

22 COUNCIL CHAIR MR. TOM LITTLEPAGE: Any
23 other questions?

24 I guess I would direct one to Mike
25 with regards to the Corps' operation on the
1 Cumberland system. 178

2 As we have seen in our process in
3 Alabama and in working with TVA, a key component of
4 this drought response strategy is communication. I
5 wanted to understand better, as you have worked
6 through the Cumberland this year or as plans have
7 been developed for drought operations, how formal is
8 a communication strategy and how broad is it in terms
9 of entailing all the various stakeholders impacted by
10 operational decisions?

11 MR. MIKE ENSCH: Well, the focus of
12 our communication strategy early in the year has been
13 primarily Wolf Creek and the impacts of the drawdown
14 at Wolf Creek. We have adjusted that strategy to
15 incorporate discussions of drought at this point in
16 time, particularly with its impacts on the operation

17 of other projects.

18 Our communication strategy is probably
19 three or four fold actually. One is face-to-face
20 communication, interaction with all elected
21 officials, and as many community representatives as
22 possible.

23 Two, we have a layout plan for public
24 news releases, and things like that, that as we
25 modify operation or reach critical points these
1 releases go to all media outlets in the affected 179
2 area.

3 Then three, our web sites for our
4 individual projects, we have just now begun adding
5 information to our Dale Hollow web site that allows
6 marine operators, boaters, other users of that lake
7 to anticipate probably the lowest lake levels they
8 have ever seen this winter. Then ultimately at
9 Memorial Day next year, if we catch some rain,
10 perhaps potentially higher lake levels than they see
11 routinely.

12 So we try to keep adjusting that
13 strategy and keep it out in the public eye.

14 COUNCIL CHAIR MR. TOM LITTLEPAGE: Any
15 other questions?

16 Kenny.

17 MR. KENNETH DARNELL: I hear the theme
18 of cooperation between the agencies, but if this gets
19 worse or in the worst-case scenario, I see all the
20 agencies in here competing against one another for a
21 very limited resource, and I think the list of
22 priorities may possibly change somewhat.

23 I see from '88 that the list of
Page 142

24 priorities probably has not changed so much now, but
25 I am not hearing a lot of specifics of what are we
1 doing right now to alleviate the effects of the 180
2 drought and what changes are we going to make next
3 year to alleviate the effects of a similar situation,
4 any of them.

5 COUNCIL CHAIR MR. TOM LITTLEPAGE: Are
6 you asking that with regards to TVA or just the
7 panelists?

8 MR. KENNETH DARNELL: The panelists.
9 Does anyone -- is your agency or group or whatever
10 working on some sort of specific plans based on this
11 years' experience already to alleviate and what would
12 those plans be?

13 MR. MIKE ENSCH: I will take a first
14 shot at that. Our release strategies mirror very
15 closely to TVA, water supply, water quality, then
16 hydropower, navigation, recreation going towards the
17 bottom of the barrel at that point.

18 we are adjusting our water release
19 strategies for all of our projects in lock step with
20 TVA because primarily our generation capability is
21 not going to meet their demand. They are going to
22 have to potentially go out on the market and find --
23 so is SEPA who we actually market through. So there
24 are those strategies that are being done.

25 we're discussing holding water in as
1 many reservoirs as we can. On the main stem we don't 181
2 have -- we don't have a lot of capacity for that, but
3 there are some minor adjustments that are being made
4 that will keep it within our operational constraints,

5 our guide curves, if you will, keep it very close to
6 that, but we're taking all of the factors in to
7 account to try to preserve what we can in the spring
8 so that we can moderate it and pass it on during the
9 summer and in the late fall months, particularly for
10 hydropower if need be.

11 MR. KENNETH DARNELL: Two specific
12 things that probably deal more with you, Mr. Enschr.
13 Do you foresee an increase in dredging along the main
14 stem to facilitate navigation during these times and
15 do you foresee that your current reservoir levels
16 will be adjusted upward or is there even potential
17 for new reservoirs?

18 MR. MIKE ENSCH: I don't see the
19 potential for new reservoirs in the time frame
20 needed.

21 MR. KENNETH DARNELL: The drought
22 would have to be several years' long for that?

23 MR. MIKE ENSCH: Yes, absolutely.
24 Dredging, the Cumberland is a relatively hard
25 bottomed river. We're running into obstacles and
1 it's rock. So we're -- we have just got to put water 182
2 on top of the rock. We have tried to remove some of
3 those in the past. We have been moderately
4 successful.

5 So for dredging on the Cumberland, I
6 don't see it as being quite the issue that it
7 definitely is on the Ohio.

8 MR. NICK FIELDER: Yeah, I would like
9 to add to that. For Tennessee the overall strategy
10 that we have right now is that these water situations
11 are a local problem that have to be solved by the

12 local utility or the -- you know, local well owner or
13 water by basically going back down to the county
14 level and saying, there's not a state solution to
15 this problem.

16 Now, when it gets to a life and safety
17 issue, then the state may step in and see what can be
18 done. Basically what we're telling communities right
19 now is that if you're drawing water out of a small
20 stream that's drying up, your best bet is to run a
21 line over to the Tennessee River and come out of one
22 of TVA's reservoirs because they have got all kinds
23 of water over there.

24 MR. KENNETH DARNELL: He just made my
25 point.

1 MR. NICK FIELDER: So that's precisely¹⁸³
2 what Maryville and Alcoa are proposing. We met with
3 them yesterday afternoon. We met with Governor
4 Bredesen the day before yesterday to confirm that
5 policy, and that's his policy. He said the utility
6 district, you know, if they need money they can raise
7 the rates. So, you know, he's not running for
8 re-election though.

9 COUNCIL CHAIR MR. TOM LITTLEPAGE: I
10 think, Russell, you were next.

11 MR. RUSSELL TOWNSEND: I guess I had
12 one more. This is primarily a question directed to
13 the federal representatives and TVA and USGS and the
14 Corps, but it could apply to the states as well. It
15 folds into Mr. Darnell's question.

16 With these Drought Management Plans in
17 existence now and with the communication issues that

18 we are discussing, has there been any formal
19 discussion between the federal agencies and any other
20 agencies for cooperative agreements such as
21 memorandums of agreement and understanding or
22 programmatic agreements as to how communications and
23 perhaps operational changes would occur in these
24 crises?

25 COUNCIL CHAIR MR. TOM LITTLEPAGE: All
1 right. Scott, do you want to try that? 184

2 MR. SCOTT GAIN: No. Is that simple?
3 We do have -- as I tried to show, we have a lot of
4 communication at many different levels. We don't
5 have and haven't had with TVA and really with our
6 other federal partners, the State of Tennessee, a
7 specific instrument that dictates how we communicate.
8 It's been largely informal but very broad in that
9 regard.

10 You know, I guess I'm not sure where
11 we would go with that. We haven't run into a barrier
12 that I have noticed yet. You know, we can easily
13 mobilize and work together if there's a need for
14 support in the fields. We're routinely involved in
15 meetings and committees with one another, but it's
16 worth thinking about.

17 COUNCIL CHAIR MR. TOM LITTLEPAGE: Has
18 money been an issue or are you primarily funding
19 activities out of --

20 MR. SCOTT GAIN: That's a very good
21 question because money is always an issue.
22 Everything we do has to be funded in some way, and
23 we're working through those kinds of issues on a
24 continuing basis.

25 Now, in the past we have had more 185
1 funding from TVA to support stream gauging
2 activities, and that kind of thing. From that
3 funding we were able to more easily cooperate with
4 one another.

5 These days we have a little bit of
6 federal funding in the NSIP, the National Streamflow
7 Information Program, which provides some base funding
8 to various offices of USGS, from which we're expected
9 to take a role in these issues, but it's always very
10 nebulous.

11 It would be certainly a thing that
12 would clarify and help us the most to have sources of
13 funding that were set aside to deal specifically with
14 things like this.

15 I mentioned earlier that one of the
16 issues that we have been facing is precision in our
17 measurement; that is, we need to go out and make
18 perhaps weekly measurements at sites where individual
19 communities are relying on water supply and are
20 finding that the information is not what they would
21 like it to be.

22 Well, we don't build that kind of
23 thing into our cost structure. So we find it very
24 stressful to arrive, you know, in the summer period
25 like this and realize we have to send five and six
1 people out every week to make additional measurements 186
2 and there's really no way to pay for that. So we
3 have to kind of make do for awhile and then try to
4 figure out how to work it into some kind of later
5 agreement.

6 COUNCIL CHAIR MR. TOM LITTLEPAGE: I
7 think Wayne wanted to add a little something to that.

8 MR. WAYNE POPPE: If I could.

9 Russell, I think there are some vehicles in place
10 already. We maybe don't think about them all the
11 time in terms of drought management, but I believe
12 Mike mentioned the Waterways Management Plan, that is
13 primarily aimed at the navigation industry, but it's
14 for both ends of the scale.

15 It's for the high ends when you have
16 got the floods and when are you going to curtail
17 navigation, plus it's on the low end in working with
18 the haulers and the industry, you know, how far
19 you're going to load to when it's -- here are the
20 pinch points currently, and that is an interagency
21 working agreement.

22 Also, in general the mechanism exists
23 through the emergency management agencies with each
24 of the states. In our emergency management
25 procedures, for instance, we have coordination
1 activities with all of those agencies. 187

2 So whether that be flood, fire,
3 tornado, you know, any national type of disaster.
4 Certainly drought falls within that. So I think the
5 mechanism is already there, maybe not utilized
6 specifically for a drought situation.

7 MR. NICK FIELDER: Russell, let me
8 explain on that a little bit. I am in the emergency
9 management business. Normally when you have a
10 disaster, a flood or tornado, whatever, there is a
11 Presidential Declaration that makes money available
12 through FEMA to provide money to the counties or the

13 agencies that's responding to that disaster.

14 We recently called FEMA and said,
15 okay, what happens if we declare a drought disaster?
16 when will the money start flowing in?

17 They said, "Don't hold your breath.
18 we will not declare a drought disaster. We just
19 don't do it. We have never done it and we won't do
20 it this time. We did it once for the Island of Samoa
21 and we didn't like the outcome. So we're not going
22 to do it again."

23 So basically those traditional sources
24 of federal funds that you would have for a tornado or
25 a flood are not going to be there for this drought
1 situation, at least that's what we're being told by¹⁸⁸
2 FEMA.

3 COUNCIL CHAIR MR. TOM LITTLEPAGE: All
4 right. I think a lot of times that seems to relate
5 to FEMA's perception or the Federal Government's
6 perception that quantity is a state issue. So in
7 their eyes they see that as the state's
8 responsibility.

9 Even Brian and I have talked about the
10 ag response because several of the states, including
11 Alabama, and I think Tennessee, have declared
12 agricultural disaster areas that have released some
13 agricultural relief dollars to farmers in these
14 impacted areas.

15 In Alabama's area it's state wide, but
16 that's really the only level of relief funding that
17 we have seen to support this activity.

18 MR. MIKE ENSCH: If I might, let me

take the concept of the thought one step further.

The Corps has proposed a Tennessee Cumberland system study that is taking a look at all aspects both economic, transportation, utilization of the waterways, utilization of the water available to the waterways in a system approach.

we have had great support with -- from Mr. Duncan and Mr. Wamp in pursuing that. Senator Frist was the champion of it, but Mr. Corker has picked up behind him. He and Senator Alexander are both supporters of it.

we anticipate, and being the fed, if we ever get out of this CRA, we anticipate a budget that would have \$200,000 in it to begin that system study, and issues specific to this can be addressed with all of the agencies that need to come to the table.

COUNCIL CHAIR MR. TOM LITTLEPAGE: All right. Okay. Jeff, I apologize for taking so long.

MR. JEFF DURNIAK: No problem. I will address this to Brian, but it's really intended for your entire draft committee, Nick, and Gene as well. I just prefer not to believe everything that Wayne says.

we have had 20 years of population growth here. It seems like -- again, I am a little bit hung on the drought level four, the worst-case scenario flow, and what the plans are there.

Do y'all feel like priorities established by your 1988 agreement are indeed still the priorities now?

A follow up question to that is: This
Page 150

1 list shows who will get the water under the
2 worse-case scenario. Do y'all have a common list
3 that you have discussed, really a longer list of
4 priorities and who may not get the water? Do you
5 have some common ground there in how you would have
6 to make those cuts or is that an issue that's really
7 left up to the individual states?

8 MR. BRIAN ATKINS: Well, we haven't
9 really looked at it in Alabama. It's not defined so
10 much as who is not going to get the water, and so
11 forth, but it's more of just coordinating the way
12 that our drought plan is set up.

13 Corresponding with the different
14 levels, it's more of trying to coordinate the proper
15 responses, making sure the information is out there
16 that's needed for some of the decisions to be made.
17 A lot of the decisions are made just based on, as it
18 turns out, the situations at hand.

19 For example, even though we have been
20 in this exceptional drought category, as far as
21 Alabama is concerned for most of the summer, the
22 marked majority of the state we haven't had a lot of
23 water systems running out of water yet.

24 Now, we have had some issues with some
25 systems outside the Tennessee basin where they are
1 located in reservoirs and the reservoir levels are 191
2 dropping and their intakes are being exposed or
3 they're developing habitation problems that -- such
4 as they are not able to pump water.

5 They have contingency plans in place.
6 So they are implementing those contingency plans to,

7 you know, either bring in floating barges or
8 what-have-you to try -- with pumps to try to pump
9 water into those intakes.

10 The same way with the industries, for
11 instance, there are several paper industries and
12 paper mills that are located on the Alabama River.
13 The Alabama River is comprised of flow from the Coosa
14 and the Tallapoosa river basins, and that's
15 controlled by releases from hydroelectric reservoirs
16 operated by Alabama Power and the Corps of engineers.

17 what we have had to do with that is
18 there's just been a lot coordination there in terms
19 of trying to make sure that there is water available
20 for those -- for those needs, where at the same time
21 the Alabama Power, for instance, has tried to cut
22 back on some of their releases to try to maintain
23 their reservoirs as far as a stability standpoint.

24 They are not -- they have already long
25 passed the point where recreation went out. It
1 just -- it went out a long time ago as far as what it¹⁹²
2 was able to -- being able to try to sustain that.

3 Part of that just can't be avoided due
4 to -- I guess trying to meet downstream flow
5 requirements. A lot of that is just based on, you
6 know, environmental requirements that are
7 established, and so forth. So some of that as far as
8 the recreation impacts can't be avoided.

9 So I guess I'd just try to say that a
10 lot of it is just trying to balance things out as
11 much as we can. We have not reached the point in
12 Tennessee yet, thank goodness, as far as Alabama is
13 concerned.

14 MR. NICK FIELDER: The situation is
15 basically decided by each utility district. They who
16 of their customers are their priority customers.

17 The town of Monteagle on I-24, their
18 water supply is diminishing. They came to the state
19 and said, "will you shut your two rest areas down.
20 They are our biggest customer, but they flush those
21 toilets 24 hours a day?" So the state shut down the
22 rest area to help them conserve their water.

23 They told the car wash that he had to
24 shut his doors and he said, "why pick on me? I don't
25 use that much water, besides when you wash cars it's
1 supposed to rain after you wash your car." 193

2 So the short answer to your question
3 is that those are local decisions made by the
4 utilities district.

5 Now, what's happening with the utility
6 districts is that if they shut off their biggest
7 customer, they are shutting off their income. So
8 they may not recover from the lack of inflow of cash.

9 COUNCIL CHAIR MR. TOM LITTLEPAGE: All
10 right. What we found in Alabama is this whole
11 discussion of demand management and as you begin to
12 not have the supplies available, like Tennessee, I
13 mean, we have tended to focus our planning efforts on
14 insuring that there's a good basis of information and
15 coordination of conditions and impacts.

16 There is a real reluctance at the
17 local level to implement a prioritization. What we
18 have seen in terms of -- to a degree in their systems
19 is they have put in mandatory cutbacks or voluntary

20 cutbacks.

21 One of the most successful models has
22 been a conservation pricing where there's actually a
23 pricing schedule that says, the more you use the more
24 you will pay, and let economics dictate a cutback.
25 Those that can afford to pay it, pay it.

1 Now, that's probably not the perfect¹⁹⁴
2 solution, but it's one that's been most politically
3 expedient so that it doesn't put the utilities in the
4 position of having to make the cutbacks, it let's the
5 market drive that.

6 So that's one of the techniques that
7 we have seen local systems put into place that has
8 helped a little bit. I don't know if Tennessee has
9 seen something.

10 MR. NICK FIELDER: Tennessee has got a
11 reverse pricing schedule right now, the more you use
12 the cheaper it is.

13 COUNCIL CHAIR MR. TOM LITTLEPAGE: So
14 it's contrary. Part of that is our mindset that
15 water is basically free and infinite. Here in the
16 southeast we have wrestled with that mindset a lot.
17 It's like if all else fails, stick a pipe in the
18 Tennessee because it's there and it's plentiful.

19 Kenny, have you got something?

20 MR. KENNETH DARNELL: Fellows, we're
21 in a tight spot when we're for having to cut down on
22 flushing the toilets on the side of the interstate.

23 Basically it's all going to come back
24 around to you're talking about the local governments.
25 If your local utility doesn't have enough water, they¹⁹⁵
1 are going to have to find it somewhere, whether they

2 run a pipe into the Tennessee or sink more wells
3 which drains the underground resources or they expand
4 or build their own water -- little water reservoirs,
5 which that would seem to be problematic to all of
6 your agencies also.

7 If the drought goes away this fall,
8 we're probably home free on this. If the drought
9 lingers for another year or two, what do you guys
10 foresee?

11 we haven't even addressed recreation,
12 and I know that probably the loudest outcry from Lake
13 Cumberland was from the recreational people that we
14 can't get our boat in the water and we can't get down
15 the water's edge.

16 when all of these entities start
17 bringing political pressure to bear, what do you
18 foresee happening?

19 MR. NICK FIELDER: I think there's
20 going to be a triage situation where life and health
21 becomes the priority, that if you decide whether, you
22 know, you cut off your water in your schools or you
23 let a mussel bed die and that goes to a public vote,
24 then that's -- you're going to have a lot of public
25 pressure. I hope it doesn't come to that point.

1 Gene, you have got your hand up real¹⁹⁶
2 quick.

3 MR. GENE GIBSON: Yeah. I was just
4 going to mention that actually it's important to
5 point out that there's issues here. One is the
6 availability of raw water, you know, and the second
7 one is the availability of treated water.

8 In many cases that you're seeing where
9 the drought -- the impacts of drought is where local
10 governments are in a crisis mode and there are
11 voluntary or mandatory conservation measures, that's
12 basically a result of not having adequate capacity to
13 treat the water.

14 what you see in a drought year like
15 this is the demands of -- that treated water demands
16 go up significantly, 50 to 100 percent in some cases,
17 where people -- the treated water -- I mean, you can
18 imagine, if it's not raining, people are using more
19 water to water their gardens, to water their lawns,
20 to wash their cars, to do all of those sorts of
21 things, and the local capacity of the systems in many
22 cases don't have that much access capacity. So you
23 will see, because of the drought and that sort of
24 thing, they are asking for voluntary conservation and
25 so forth.

1 So if you sort of separate those -- 197
2 the number of entities that have treated water
3 capacity issues and those that have raw water issues
4 and you can separate the raw water issues into groups
5 that depend on, say, groundwater and wells and that
6 sort of thing and those that are depending on the
7 Tennessee River system, by and large we don't have
8 any raw water problems to speak of on the Tennessee
9 River surface water, that's why Nick is saying to go
10 to the Tennessee River.

11 You know, those that depend on wells
12 and groundwater levels and that sort of thing and
13 creeks and streams that are dependent on rainfall,
14 that's where you're having more of these problems.

15 So you sort of hear all of this stuff,
16 but then it sort of gets rotated back to your
17 thinking that it's all a problem with the water
18 supply from the Tennessee River system, you know, and
19 that's not exactly the case. So I wanted to make
20 that point for you.

21 MR. NICK FIELDER: Yeah. We have got
22 55 water systems in Tennessee in trouble right now,
23 and none of those are on the Tennessee River.

24 MR. GENE GIBSON: The people that are
25 located on the Tennessee River right now are the
1 lucky ones, you know, as Nick has indicated. So I¹⁹⁸
2 keep reminding him to thank God for TVA and the river
3 system.

4 COUNCIL CHAIR MR. TOM LITTLEPAGE: To
5 keep buying electricity.

6 MR. KENNETH DARNELL: You had to get
7 that one in there.

8 MR. NICK FIELDER: Somebody told the
9 City of Shelbyville the other day that if there -- if
10 the Normandy Dam wasn't there, they would have
11 8 cubic feet per second of water for their needs. So
12 be thankful that Normandy was built.

13 COUNCIL CHAIR MR. TOM LITTLEPAGE: All
14 right. Any other questions?

15 I want to thank our panelists for
16 their efforts and presentations and for helping out
17 on these questions. Thank you very much, gentlemen.

18 We're going to go ahead and -- since
19 we took a break, we're going to ask Buff to move her
20 presentation up and talk to us about some updates on

21 Land Policy and Reservoir Land Management Plans.

22 Do we need -- are you ready to go?

23 MS. BUFF CROSBY: Yesterday I gave an
24 update of the Land Policy and what was in it to the
25 new members. Today I want to kind of give an update
1 to you about what's happened since the Land Policy,¹⁹⁹
2 and that's really -- let me see if I can get this
3 right. Okay. I broke it.

4 COUNCIL CHAIR MR. TOM LITTLEPAGE: I
5 think Nick wore out the battery.

6 MS. BUFF CROSBY: When the Land Policy
7 was approved the Board asked the staff to go back in
8 and do an assessment of all of our industrial
9 properties and our recreation reservoir properties.
10 They wanted us to look at, are those lands suitable
11 and capable for those specific uses?

12 If you will remember, we had some land
13 plans that are relatively older and they need these
14 updates. So they wanted us to go back and take a
15 look at, those lands that's right now allocated for
16 those, are they still suitable and are they still
17 available for those type uses?

18 Those that we came back and said that
19 the -- once we determined an assessment and
20 determined what tracks of land were suitable and
21 capable for those uses, then we would move forward
22 with looking at actual actions on those lands and
23 making those lands available for lease easements or
24 disposal.

25 Next slide. Back one.

1 So in the industrial assessment, we²⁰⁰
2 will kind of go through that a little bit. we

3 completed an assessment of parcels designated for
4 industrial uses on 13 reservoirs. Suitability and
5 need was confirmed for about 107 tracts for a total
6 of a little over 4,000 acres of property.

7 The criteria that we used to look at
8 the suitability and capability of these tracts were
9 we went out and looked at the physical site
10 characteristics. we looked at the infrastructure
11 around these properties.

12 You know, is the utilities close by?
13 Is roads available? what's the rail and water access
14 around there?

15 Then one or more probably important
16 things to look at is what was the compatibility with
17 the adjacent land uses?

18 we didn't want any properties that
19 might be allocated for industrial development being
20 surrounded all around it by residential development.
21 we knew we would come into some user conflicts. So
22 those are the type of things we looked at.

23 we also were looking at the
24 development trends on the reservoirs. what is the
25 projected needs in those areas and then what is the
1 population growth? 201

2 So what we came out, again, is 107
3 tracts suitable for that. what we did find of that
4 4,000 acres is about 31 percent of the acres is
5 already committed under existing land use agreements;
6 that is, we already have existing industry sitting on
7 about 31 percent or it may be lands that are in an
8 existing industrial park ready to be used.

9 we also looked at that 90 percent of
10 that industrial acreage is on six reservoirs. Those
11 are being mostly our main-stem reservoirs. If you
12 think about it, that probably make sense because the
13 majority of our lands would be on our larger
14 main-stem reservoirs and the land would be more
15 suitable for that use. Whereas, our tributary lands
16 might be more -- would not be quite as conducive for
17 industrial development.

18 The next slide just kind of gives
19 you -- shows the table of where all of those acreages
20 are. About 83 percent of that land is on five
21 reservoirs, Kentucky, Pickwick, Wheeler, Guntersville
22 and Watts Bar.

23 The next slide just shows you that we
24 have some lands, a little under 500 acres, that is
25 available in our tributary reservoirs. The majority
1 of that is sitting on Tellico, and that Tellico
2 acreage is sitting in industrial parks.

3 When we looked at the recreational
4 assessment, you can go to the next slide, we
5 completed reviews on recreation parcels on nine
6 mainstream reservoirs and 23 tributary reservoirs.

7 If you think about it, we probably
8 would have more lands available and suitable for
9 recreation use, and there's probably more public
10 demands for recreation use.

11 When we looked at the needs for an
12 assessment for recreation, we kind of took a little
13 different approach on looking at this assessment in
14 that we first wanted to see, what is the recreational
15 trends on a particular reservoir? We wanted to look

16 at, where is all the public boat access? where is
17 all the commercial marinas? where is the
18 campgrounds? what is the population trends coming to
19 those reservoirs? what is the recreation trends in
20 the future?

21 Once we knew that, then we could go
22 look at the suitability of those tracts of lands for
23 recreation. Then, you know, we could see, okay, is
24 this piece of property suitable for the types of
25 recreation that this reservoir is demanding?

203

1 we also on some of -- all of the
2 reservoirs, we did take into account boat density, as
3 well as private water-use facility development.

4 For the recreation assessment, we
5 looked at a total of 810 parcels for a total of
6 21,000 acres that we determined were suitable for
7 uses.

8 The next chart shows all the
9 reservoirs we looked at. 75 percent of the
10 recreation lands are around eight of the 32
11 reservoirs, that being Kentucky, Pickwick, Wheeler,
12 Gunter'sville, Chickamauga, Watts Bar, Tellico, and
13 Norris. Again, it's mostly our main-stem reservoirs,
14 besides Tellico and Norris.

15 This next slides kind of shows the
16 rest of the reservoirs that had the recreation
17 acreage. Probably the biggest thing you should
18 really take a look at is down here at the totals.

19 where you have a total acreage of
20 about 21,000 acres of recreation land, we have 19,000
21 of that acreage already committed to recreation. So,

22 again, like the industrial, somebody -- we already
23 have a commitment in place for that use. So either
24 it's under -- a campground is there, a public boat
25 launch ramp, commercial marinas, those types of thing
1 are already committed and on those sites. 204

2 So what this assessment really told us
3 and our staff is that we really needed to take a look
4 at this 21,000 acres and ensure that that committed
5 acreage is meeting the recreation demands of the
6 public, and then that remaining 1,000 acres or so we
7 need to be pretty judicious on how we're going to use
8 that acreage for recreation.

9 So in conclusion on the assessment, we
10 had a total of 917 parcels that we recommended for
11 either industrial or recreational purposes. We did
12 find about 13 parcels that we determined that are not
13 suitable or needed for the recommended uses.

14 What we planned to do next is those
15 parcels that are not recommended for use, when we
16 update the next plan, those are likely to be
17 reallocated to a different use.

18 Where we're at with this survey is --
19 go to the next slide. We released the survey and the
20 maps on the TVA web site on September 28th. We're
21 also providing all of this information to our
22 economic development folks in TVA, and all of our
23 watershed teams have all of this information so that
24 we can discuss that with the public.

25 So with that, I don't know if anybody
1 has any questions on the assessments or the updates? 205

2 COUNCIL CHAIR MR. TOM LITTLEPAGE: Any
3 questions?

4 Is there a time line for this, for
5 these parcels, the 13 parcels that are just
6 available?

7 MS. BUFF CROSBY: No.

8 COUNCIL CHAIR MR. TOM LITTLEPAGE: So
9 they are just readily available to be reallocated?

10 MS. BUFF CROSBY: Right. We will
11 probably do that, you know, as we update our plans.
12 And we haven't really had any interest into those
13 sites.

14 Bruce.

15 MR. BRUCE SHUPP: Your existing
16 facilities, are there standards for compliance for a
17 marina, for example? Would the condition of the
18 piers and the docks and any other facilities they
19 have, is there compliance standards that have to be
20 met?

21 MS. BUFF CROSBY: When it's a TVA
22 leased marina or campground, we have agreements in
23 place. We're actually looking at, is there a way for
24 us to maybe increase what that compliance looks like?

25 For instance, you know, in the future,
1 do we want those campgrounds to look a little
2 differently or do we want more standards there?

3 Right now we just follow the existing
4 agreement that we have in place, and there is
5 commitments into those agreements.

6 DFO MR. PEYTON HAIRSTON: Buff, aren't
7 we also looking into how to police the agreements
8 that we do have in place to make sure that those
9 folks are in compliance?

10 MS. BUFF CROSBY: Yes. We're looking
11 at probably increasing our compliance checks on those
12 existing agreements.

13 MR. BRUCE SHUPP: I would think that
14 if an operator has significant acreage under lease
15 now but he's operating at a level that doesn't really
16 accommodate a lot of need, you know, does that
17 operator have an obligation to upgrade his facility
18 or does he -- could he lose his lease to an operator
19 that wanted to come in and upgrade that facility?

20 MS. BUFF CROSBY: And I think that's
21 something we want to take a look at, those existing
22 facilities out there, are they meeting those
23 recreational needs, and exactly what you're saying,
24 do we need more -- if we have a commercial marina, do
25 they need more spaces there? Do they have too much?
1 That's something that we do need to take a step back²⁰⁷
2 and look at, you know, how do we want to do that
3 moving forward?

4 Remember, TVA, when we first started,
5 you know, the reservoirs, we were trying to draw
6 folks to the reservoir. So we were trying to get
7 anybody -- you know, we were trying to get everybody
8 there to recreate.

9 So now that everybody is coming to the
10 reservoirs for recreation and we're starting to get
11 an increase in development, now we kind of need to
12 take a step back and say, are we meeting the
13 recreation demands there rather than just everybody
14 come, now are we meeting those demands?

15 COUNCIL CHAIR MR. TOM LITTLEPAGE: All
16 right. Any other questions?

17 Thank you.
18 We're going to move right into your
19 second one.

20 MS. BUFF CROSBY: Kind of switching
21 gears, I will give you an update, we have three
22 reservoir Land Management Plans that we're working on
23 right now. I just wanted to give you an update on
24 where those are.

25 To start with though, I want to just
1 give a little refresher on our reservoir land 208
2 planning process. This has got a lot of stuff on
3 this slide.

4 Our reservoir land plans, the intent
5 of those plans is to provide us with a blueprint for
6 how we manage those lands in the future and give our
7 staff, you know, a way of, this is how we manage
8 these properties.

9 The overriding two things that go into
10 the land plan when we have them, one, what does the
11 stakeholders want and how does the stakeholders of
12 the public want us to manage those lands?

13 Then once we know what the
14 stakeholders want, we need to look at can those lands
15 meet those needs? You know, what is the suitability
16 and capability of those lands for a variety of uses?

17 So one of the first things we will do
18 is start out -- the yellow here, the highlighted
19 areas, shows where we have the stakeholder input,
20 where we get the stakeholder comments.

21 We start out by defining what that
22 stakeholder input is and identifying what their needs

23 are. Once we know that, then we will go out there
24 and collect data, the part that our staff really
25 loves to do, go to the fields and collect data and
1 see where the threatened and endangered species are,²⁰⁹
2 all the neat stuff that is out there.

3 Once they bring that data back, then
4 we kind of mesh our stakeholder needs with our
5 resource data and start putting those lands into
6 different buckets.

7 Once we have those put into our
8 different buckets, allocation buckets, then we will
9 take that out to the public and say, did we hear you
10 right? Based on the data that we have collected,
11 here's what we think the buckets of all of these
12 properties need to be put into.

13 Once we have done that, then we take
14 it to our Board of Directors for their approval, and
15 then we have a plan that we hope is good for about
16 ten years in how we manage those properties.

17 The next slide is we will go through
18 the buckets, as I call them, that we put our lands
19 into. The zone one is our non-TVA shore land. This
20 is the zone that we typically put our flowage
21 easement lands into. That's the lands around the
22 reservoir that we don't own the land but we have the
23 right to put water on.

24 Zone two is our TVA project
25 operations, this is the lands that would be our dam
1 reservations and where we would have actual²¹⁰
2 operations at.

3 Zone three, the sensitive resource
4 management, is lands that we're managing to protect

5 or enhance a specific sensitive resource, such as a
6 cultural resource site, you know, a habitat
7 protection area, something that's very sensitive that
8 we want to manage.

9 The zone four, the natural resource
10 conservation is the lands that we're managing for the
11 enhancement of the natural resources for human use
12 and appreciation. This is the properties that we
13 would manage for hunting, for wildlife habitat, for
14 informal recreation. It's more for the public use
15 areas that we manage those properties for.

16 Industrial, zone five, I think is
17 pretty self-explanatory.

18 Zone six, recreation, this is the
19 lands that we would manage for concentrated
20 recreation activities that would require capital
21 improvement and maintenance. So this is the
22 properties that we would use -- put commercial
23 marinas one, campgrounds, resorts, parks, you know,
24 boat ramps, that's the zone that those go into.

25 Then zone seven, the shoreline access
1 areas, the shoreline access areas around our ²¹¹
2 reservoirs are set. These aren't something that we
3 would go put into a bucket. Based on people's deeds
4 and how we purchased the properties when we
5 originally impounded the reservoirs dictates on the
6 shoreline access areas. These are the access areas
7 where people have the rights to come to TVA and ask
8 for a permit for boat docks or piers.

9 So getting into kind of the updates on
10 the land plans, we will start with Watts Bar. This

11 kind of shows you a map -- kind of an overview map of
12 Watts Bar Reservoir just outside up here in
13 Knoxville. The next slide gives you a little bit of
14 background information.

15 Watts Bar was constructed in 1944.
16 Originally TVA acquired about 54,000 acres of land
17 where we now manage approximately 16,000. Watts Bar
18 has about 721 miles of shoreline and includes about
19 four counties.

20 This plan is a plan that was
21 completed -- an updated plan. We completed this plan
22 in 1988. So we are updating this plan.

23 The next slide kind of shows where we
24 are in our process. As you can see, we're nearly
25 complete with this plan. The draft environmental
1 statement was released to the public and the public²¹²
2 comments have just ended.

3 So where we are right now is taking
4 all of those comments we received from the public,
5 looking at our allocations, looking at the
6 environmental impacts, and finalizing that plan to
7 finish up.

8 So the next slide kind of shows -- I'm
9 getting a little ahead of myself, but we did have the
10 public comments from August to September. The
11 majority of the comments that we received were pretty
12 positive on the draft plan that went out. They liked
13 what we put out there. The majority of comments are
14 opposing any further industrial development on Watts
15 Bar. The majority supported the alternative C.

16 When we do -- many of you know, when
17 we do an EIS we typically have two or three

18 alternatives. The first alternative would be we
19 would manage the lands just as it was in 1988 with
20 the original plan, that we wouldn't make any changes.

21 Our alternative A is more of a -- more
22 development-type alternative.

23 Then alternative C is more alternative
24 that emphasis more of the natural resource
25 conservation and informal recreation.

1 The next slide shows our tentative 213
2 schedule. What we hope to do is have the final
3 tentatively to be completed around the January time
4 frame.

5 The next plan that we're working on is
6 the Mountain Reservoirs Land Plan, and that's up in
7 the Tennessee, North Carolina, and Georgia area.

8 The next slide we will show you is
9 we're planning about 6,000 acres up in that area, and
10 we're combining this plan with about nine reservoirs.
11 A lot of our mainstream reservoirs where we have a
12 lot more acreage, and Watts Bar is 16,000 acres, so
13 we will plan that reservoir by itself.

14 On a lot of our tributary reservoirs,
15 TVA doesn't have as much public lands up in those
16 areas. So we will combine those plans into one plan.
17 That's in an effort to be more efficient and really
18 not to confuse the public by going out in the same
19 area with public meetings on each individual
20 reservoir. We want to be able to have comments one
21 time and they can give us input on each of those nine
22 reservoirs at one time.

23 The mountain reservoirs have not been

24 previously planned. So this is a first-time plan for
25 these reservoirs.

214

1 The next slide kind of shows where we
2 are at. We have just completed our public scoping
3 period, which was held from May through June. We had
4 a good comment period. We had a lot of turnout at
5 our public meeting. We have received about 473
6 comments.

7 The comment themes were centered
8 around land policy and planning. A lot of folks
9 commented that they really appreciated TVA putting
10 out the land policy and liked what the policy said.

11 They wanted more recreation, which
12 maybe I shouldn't be surprised, but I was surprised
13 that the recreation that they were really asking for
14 up in that area was mountain biking. They wanted
15 us -- to protect the more natural resources, you
16 know, make sure that we don't develop that.

17 And then as you can imagine with the
18 drought going on, we got a lot of comments on
19 reservoir levels.

20 The scoping report, which summarizes
21 that public participation, takes all those comments
22 and themeatizes (phonetic) them and puts them into a
23 report. We put that -- released that in September,
24 and that is out on the TVA web site.

25 This shaded area in the next slide 215

1 kind of shows you where we are with this plan and the
2 overall process. So we have just completed the land
3 allocation, taking all of that data. The public is
4 telling us and we're putting all of the lands into
5 the different buckets.

6 Once we get that done, we will go back
7 out to the public and say, did we hear you right in
8 what you were telling us what you wanted?

9 So the next slide shows us the
10 tentative next steps that we will be doing.
11 Hopefully in that February and March time frame is
12 when we will be taking a draft back out to the public
13 that has things into different buckets and let the
14 public react to that.

15 The next plan that we have got going,
16 and this one we're just getting started, and it's our
17 northern tributary reservoirs. This is the eastern
18 end.

19 The next slide will show you what
20 reservoirs that we're planning. Again, because of
21 the limited amount of acreage that we own around
22 these reservoirs, we're combining this plan with ten
23 reservoirs into one plan for about 17,200 acres.

24 One note here is that Douglas and
25 Cherokee Reservoirs do have an existing plan, but all
1 the other reservoirs do not have a plan. ²¹⁶

2 I should note -- I don't know if we
3 really consider Beaver Creek and Clear Creek as a
4 reservoir, but we do have dam properties on those two
5 areas.

6 The little facts on the next slide
7 kind of talk to what we have there. We do have about
8 487 parcels. You see only about 26 percent of those
9 can be planned, which means 126 parcels do not
10 already have commitments on them, such as there's
11 already a commercial marina or a campground already

12 on there.

13 So that 129 parcels would be what we
14 will ask the public, what would you like to see out
15 there? We hope to have this plan completed around
16 the June 2009 period.

17 The next slide will show you in that
18 process where we're at, and we're just now starting
19 to -- getting ready to go out and ask for public
20 input and stakeholder input on this one.

21 The next slide will show you the next
22 steps that we have. We're hoping to go get the
23 public input and talk with key community stakeholders
24 around the January time frame of this next year.

25 So with that, that's the update we
1 have on land plans, if anybody has any questions on²¹⁷
2 that.

3 COUNCIL CHAIR MR. TOM LITTLEPAGE: Any
4 questions for Buff?

5 You've got it, Glen.

6 MR. GLEN BIBBINS: You said Boone
7 and -- you said Douglas and Cherokee was just like
8 Boone and Cherokee?

9 MS. BUFF CROSBY: It's Cherokee and
10 Douglas that have -- Boone, I'm sorry, it is Boone.

11 MR. GLEN BIBBINS: Thank you.

12 MS. BUFF CROSBY: It's Boone, correct.
13 You're right, it's Boone and Cherokee. I wish
14 Douglas had a plan.

15 COUNCIL CHAIR MR. TOM LITTLEPAGE: Any
16 other questions?

17 Okay. With the concurrence of the
18 Council, if it's okay, we're going to let Mike go

19 ahead. He's got to drive back to Nashville. So
20 we're going to bump him ahead of Gene and let him
21 give his Wolf Creek update.

22 MR. MIKE ENSCH: I appreciate you
23 allowing me to do this so I can head on back, but
24 what I have been asked to do is give an update on
25 what's going on at Wolf Creek Dam.

218

1 It is one of the six dams that the
2 Corps of Engineers operates nationwide that is a --
3 that has a serious dam safety concern, and I am going
4 to go through a little bit about how we got to the
5 point that we're at and what we're doing to fix it
6 and some of the impacts that that's had.

7 Lake Cumberland, behind it is -- the
8 Wolf Creek Dam is a pretty standard looking dam,
9 standard appearing. We have got a concrete portion
10 with spillways and a powerhouse below that and then a
11 longer embankment. It's about 5,000 feet all total,
12 a 1,000 feet on the concrete portion, about 4,000 on
13 the embankment.

14 The problem was created when the dam
15 was built back in the '30s and the '40s. You would
16 not typically in this day and age put a dam on a
17 foundation like that with a lot of porous limestone
18 rock, but this is the kind of foundation that is
19 typical of course geology that runs rampant through
20 much of the Appalachian region, specifically on the
21 western slope.

22 We have two features of limestone that
23 come together. One of them is very soluble and very
24 porous. The one beneath it is good.

25 In today's day and age, we would 219
1 typically take out the bad limestone down to good
2 rock and build the foundation on that and put the dam
3 above it. We also probably would not put an earthen
4 dam above a foundation similar to this. We would go
5 with a rolled concrete -- rolled and compacted
6 concrete dam.

7 In the '30s and '40s they felt that
8 the technology was available. So the dam -- this,
9 among others, were constructed.

10 You can see the solution features, the
11 caves that are in this foundation, and you get kind
12 of an idea of the size. There's a gentleman below
13 the ladder and there's some folks working on the
14 scaffold there. Just to get an idea of the size of
15 that, we figure that's the OSHA inspector up on top.

16 What we want to do in this day and age
17 is take this and lay it back. What happened was this
18 ran nearly along the same alignment that we would put
19 what we call a cutoff trench in beneath the dam.

20 The cutoff trench would be opened up.
21 You would put clay into it. Then you compact that
22 clay to form a non-permeable barrier for water. All
23 earthen dams have seepage of some sort, but you try
24 to control it.

25 Well, this particular feature happened 220
1 to be in the very same general location as the cutoff
2 trench. So they just utilized this as a cutoff
3 trench.

4 They filled it with dirt. They
5 compacted it with dozers. They pushed dirt into --
6 these are noted as caves, and they pushed dirt into

7 those and tried to compact it and then built the dam
8 up from there.

9 So this is a typical portion of a dam.
10 You have the earthen embankment in brown on top with
11 some rock protection on the upstream side. The
12 cutoff trench I was mentioning is built through the
13 center of the dam and down to what typically would be
14 good rock, but in the Wolf Creek case it was built
15 into the formation of limestone, which was the poor
16 foundation, and there are many different solution
17 features in there.

18 Then you fill the lake. In the
19 typical progression of time after you fill the lake,
20 the lake fills and water does permeate the portions
21 of the dam and comes out on the downstream side in
22 some form or fashion.

23 We measured that. TVA does the same
24 thing. The Bureau of Reclamation does the same
25 thing. Anybody that builds an earthen dam does many
1 of these same types of precautions. ²²¹

2 You measure that by piezometers, tubes
3 that are driven into the dam that give you an idea --
4 a long-term idea of what the water levels in that dam
5 are. So we get a reading from these piezometers.

6 What you're trying to avoid or detect,
7 given the situation, is seepage patterns that will
8 begin, and they will come from the downstream. It
9 will seep -- it will seep upstream through the
10 soluble portions that are possibly filled with clay
11 and filled with soils.

12 The water will seek its level on the

13 upstream side and take the dirt out of these solution
14 features. What you want to avoid is anything similar
15 that is shown on the downstream portion where that
16 seepage has been created in the embankment, the dirt
17 has gone through that feature out the bottom and you
18 have what's called a sinkhole, and that provides a
19 conduit for water to flow through that area.

20 You will notice over on the right-hand
21 side of the screen, there's a potential for that
22 sinkhole to come out on the upstream portion of the
23 dam where it would not be noticed until you have a
24 dam in a very advanced state of failure. So that's
25 what we were encountering at Wolf Creek.

1 The dam, as I said, was built in the ²²²
2 '30s and the '40s, stopped very briefly for the war.
3 It was continued in '46 and completed in about 1951.

4 What happened about 20 years after the
5 dam was built, 18 to 20, two sinkholes appeared in
6 the back slope of the dam. We had some muddy flow in
7 the tailwater, which is indicative of a failure in
8 progress and of a significant problem. We also had
9 some wet areas on the far side of the embankment.

10 So what remedy was put in place in the
11 late '60s and then through the end of the '70s, we
12 put in a series of grout curtains. Grout is a very
13 porous -- or not porous. It's a very wet solution of
14 concrete that does go down into a hole. You can
15 inject some pressure and have it fill cavities, fill
16 voids.

17 So we put in a grout curtain and then
18 we built a retaining wall, a diaphragm wall on the
19 upstream side of the dam through the center line of

20 the dam. And you can see down below the series of
21 grout curtains that we put in there.

22 Again, the problem areas that we were
23 focusing on were right around the switch yard, the
24 sinkholes there, the muddy flow there, and they felt
25 that where the concrete portion of the dam met the
1 earthen portion, that that was one of the significant²²³
2 problem areas. That's called the wraparound section.
3 we are looking at that particular section again
4 today.

5 So what happens when you put in a
6 cutoff wall?

7 This was the cutoff wall that was
8 installed in the '60s, well, actually in the '70s.
9 They built a cutoff wall that met up or abutted up
10 against the concrete portion of the dam and extended
11 for about 2,500, nearly about 3,000 feet on down the
12 dam.

13 That wall went down to an elevation of
14 550, which at that point in time all the indicators
15 were that our seepage problems were in and around
16 that elevation and above that elevation. By going to
17 550 we would be able to find a leaper's formation of
18 limestone, which is the better and more solid
19 formation.

20 we also went in at the cutoff trench
21 and put in a grout curtain down beneath that. A
22 grout curtain is not a permanent fix. As I said,
23 it's a very soluble form of concrete. Eventually it
24 will deteriorate and itself be carried away.

25 So our plan now is to put in a second²²⁴

1 cutoff wall, that's a -- the primary fix for Wolf
2 Creek Dam in our scenario today is a primary cutoff
3 wall that will go down to elevation 475, another
4 75 feet deeper, which should find that good layer of
5 rock, and then drill a grout curtain beneath that.

6 So what we're going to do is put a
7 wall in front of the existing wall, only this one
8 will have two additional features. If you will
9 recall, I said that the original wall abutted up
10 against the concrete section.

11 There's indications that where that
12 wall met the concrete section, there's seepage in
13 that area. It just probably couldn't be avoided
14 because you can't very well 200 feet underground join
15 two pieces of concrete together. The other piece of
16 it is it will extend the entire length of the dam to
17 the other abutment.

18 Engineers in the '60s and '70s felt
19 that the primary problem area for the dam was in that
20 wraparound section and about halfway down the
21 embankment, and that's where they built the wall.

22 In a large degree, it was successful.
23 It's lasted for going on 30 years. The dam is still
24 there, the dam is still functioning, but we're going
25 to put in a new wall now. We're also going to add
1 some grout curtains. 225

2 Now, this was the existing wall. As
3 you notice it, it began at the concrete portion and
4 went about two-thirds of the way. The new wall will
5 go the full length of the dam and in front of that
6 wraparound section.

7 Here's the remedy of -- kind of an
Page 178

8 engineering scenario for you, the concrete -- the
9 gray on left-hand side is concrete portion of the
10 dam, no indication of problem whatsoever.

11 However, we have driven about 65 grout
12 holes through the foundation of that concrete portion
13 down about another 125 feet. That drilling is
14 complete. We are very comfortable that all water has
15 been shut off and all seepage has been shut off at
16 that point.

17 Then the brown -- the tan line is the
18 dirt embankment as it goes across the dam and meets
19 the far abutment. The blue was the old cutoff wall.
20 So you can tell how much deeper it went than the
21 earthen embankment and where it came back up. The
22 two deepest portions were areas where we had
23 indications of seepage in those areas and that's why
24 they went further.

25 Now you will see that the red line is
1 going to go, again, about 75 feet all total deeper ²²⁶
2 and all the way across the dam than that other
3 portion, and then the grout curtain will go down
4 further, that green line below, down probably to
5 about elevation 425.

6 Funding for this project, this is one
7 project that -- if you have ever worked for the
8 Federal Government, and in my career this is the
9 first project I have ever been associated with,
10 funding is absolutely no problem. Every penny that
11 we have asked for we have gotten for this project,
12 and we fully anticipate we're going to continue to
13 get that.

14 We will expend about \$54 million next
15 year. We're going to finish the grout curtain.
16 we're going to begin work on the cutoff wall. Then
17 that's our funding stream through the end of project,
18 a total cost of about \$310 million.

19 What we're doing right now, we have
20 done some grouting in the concrete portion. We're
21 drilling holes on an upstream grout curtain. There
22 will be -- the cutoff wall will -- there will also be
23 a grout curtain on the upstream portion of that and a
24 grout curtain on the downstream portion of that
25 cutoff wall.

227

1 So we're going to have two grout
2 curtains and then the main wall running down the
3 middle of that. I have got a real good picture that
4 gives you an idea of how that's been installed here
5 in just a moment.

6 Then we also have what we're calling a
7 relocation project that is on the far end of the dam
8 from the upper picture. We had a boat ramp right at
9 the base of the dam. Right now that area has to be
10 used as a staging area for the contractor. That's
11 where they are going to put their concrete batch
12 plant. That's where they are going to have their
13 stockpile. It's a work platform for them. So that
14 area was going to be totally removed from use.

15 We have negotiated with them. We're
16 going to put in an extra boat ramp down there. That
17 area will be utilized as a contract or lay-down area.

18 This is kind of a picture of that
19 area, the new boat ramp on the right, the old boat or
20 the existing boat ramp on the left at the base of the

21 dam. That entire area is going to be brought up flat
22 with the work platform.

23 You can kind of see in the gray, above
24 the gray, there's a tan line that leads down there,
25 again, I will have a better picture here in just a
1 moment, but that is the staging area and the work 228
2 area on the right-hand abutment of the dam.

3 This is the work platform where the
4 majority of the construction is going to be underway.
5 As you can see, it comes this side of the end of that
6 concrete wall. So it covers the wraparound section.

7 And if you will bear with me just a
8 second, the upstream grout curtain is going to be
9 placed along -- these are cones or these are holes
10 that have already been drilled that are going down to
11 about elevation 425.

12 So the grout -- this is the grout
13 line. What we're going to do there is we're putting
14 those holes on 20-foot centers. We're coming back
15 and we're going to put 10-foot center holes in the
16 middle of those. If need be, if tests show more are
17 needed, we're going to cut that in half and put grout
18 holes on 5-foot centers between those. So we intend
19 to have a complete grout curtain across the face of
20 the dam.

21 The cutoff wall will be just upstream
22 or towards the water from that row of cones, and then
23 the downstream grout wall will be about 20 feet
24 beyond it. That is the work platform that the
25 contractor has constructed.

1 We have seven drill rigs working right 229

2 now. There are two grout batch plants working. So
3 we're pretty well moving along with that piece of the
4 construction.

5 These are our critical contracts.
6 Holcomb's Landing, almost complete. The gallery
7 grouting, that's in that concrete portion of the dam
8 I mentioned those 65 holes or so, that's done.

9 Critical area one and two, the
10 critical area being the wraparound section of the dam
11 and down where the end of the other cutoff wall was.
12 Those we are done grouting, 90 percent done in there.
13 The upstream grout line is about 30 percent done. It
14 will be completed in January of this coming year.
15 Then we have got the other two contracts, the major
16 one, of course, being the cutoff wall. That's kind
17 of a time line there. I believe you-all have a
18 handout of that.

19 what we have done for interim risk
20 reduction measures. We needed to take some immediate
21 steps. We did somewhat of an unprecedented action,
22 well, definitely for the Corps of Engineers and
23 somewhat in the Federal Government, last January, a
24 year ago this coming January, we declared Wolf Creek
25 to be an emergency.

1 In that respect we began immediate 230
2 actions to remediate the potential for downstream
3 problems at the dam. We worked with counsel of
4 environmental quality. We need not do a NEPA process
5 to begin with. We are completing that now, but we
6 were able to move ahead.

7 what we have done, we put together a
8 communication plan, and I alluded to that a little

9 bit earlier today in some of our -- in our
10 discussions about drought management.

11 we have trained the project staff. we
12 have put on five additional folks on the project
13 staff because we are now doing 24/7 monitoring of the
14 back slope of the dam. we were out on the dam 24
15 hours a day, seven days a week.

16 we have folks traversing the dam.
17 There are critical areas that they are looking at and
18 that they are monitoring. Some of our
19 instrumentation, which was read on a monthly basis,
20 is being read on a weekly basis. Some of it is being
21 read daily. So we're doing increased inspections.

22 we have added lighting across the back
23 slope of the dam, and now we're putting it in the
24 downstream area.

25 we have also been very involved with
1 our emergency management folks downstream. Kentucky²³¹
2 Emergency Management has weighed in as a big, big
3 player in this. we have worked with all of our
4 emergency management folks.

5 we have conducted some evacuation
6 drills. They have been provided weather radios,
7 other means of communications in case evacuation is
8 necessary.

9 Again, we're expediting the grouting.
10 The lake level restrictions, this is something that
11 comes into play, particularly from a resource
12 management aspect.

13 In '05 we brought the lake down and
14 started to manage it along what's called SEPA curve,

15 the hydropower generation curve. We took it to the
16 bottom of that curve. We still stayed within the
17 band that allowed us to continue generation through
18 the course of the year, but in '07, January of '07,
19 we said we needed to take the lake down further.

20 One of our outside review teams, and
21 this is the team that made a lot of the newspapers
22 and a lot of the headlines, one of the outside review
23 teams we had reviewing Wolf Creek from a dam safety
24 perspective said you needed to essentially drop the
25 lake to elevation 610 right now. That would
1 essentially drain the lake. 232

2 One of the issues with Wolf Creek is
3 it's a huge lake. It's 100 miles long. It has a
4 tremendous amount of storage and a tremendous narrow
5 drainage basin. There would be no way we could
6 maintain the lake at 610. If you get a bit of
7 rainfall and it will jump 20 feet almost overnight.

8 What we did was we assessed what we
9 had up on the project itself. We had ten water
10 intakes that were critical to health and safety up on
11 the project.

12 Community water intakes, county water
13 intakes, two industries, and then the Sherman Cooper
14 Steam Plant. The uppermost of those intakes was at
15 about elevation 676. If we drained it below that
16 level, well, for one we would have taken Sherman
17 Cooper Steam Plant out of production and we would
18 have started to impact the water intakes for
19 communities.

20 So for public health and safety
21 reasons, we decided to drop the lake to elevation 680

22 and maintain it there. That's 43 feet below normal.
23 That, in and of itself, presented a good solution to
24 issues for people downstream.

25 It definitely would reduce the crest²³³
1 of any problem should the dam go into active failure
2 and we lose the pool. It definitely reduces the
3 crest.

4 what it didn't do was up on the
5 reservoir we have about \$155 million economic benefit
6 from recreation on that project on an annual basis,
7 not just to the Somerset, Kentucky area but to the
8 region. We were taking -- we had 48 boat ramps on
9 the lake, we took 40 of them out of service.

10 we have 11 marinas on the lake, we
11 absolutely dry docked one of them. Another one had
12 to move. A third one relocated basically. Then we
13 got the only rain we have gotten this entire year
14 back in March of last year and took him 45 miles
15 downstream from where he had relocated.

16 So we had some issues up on the lake
17 that we were attempting to deal with, but that's just
18 part of the operational aspect of having a problem
19 like this.

20 This is the -- kind of indicative of
21 what we did in '05 following that SEPA guide curve
22 and then where we went to in '07. I can tell you now
23 that out in October we wanted to hold at 680, we're
24 now at 679. We simply cannot keep up with
25 evaporation. The inflow is not there.

1 we have two small projects upstream.²³⁴
2 we have even drained -- almost drained Laurel in an

3 effort to keep water being able to flow through wolf
4 Creek. We have downstream water quality issues that
5 we're trying to mitigate.

6 We also have two community water
7 intakes downstream at Burksville and Cumberland
8 County, which had been missurveyed. We thought that
9 the elevation of those intakes was one thing, it
10 turned out they were 2 feet off. So that posed a
11 problem for us, but we are keeping water over those
12 intakes. There's our 680 band.

13 Then one of the things that we did,
14 not knowing the status -- where we would be with the
15 status of the dam and the construction, we notified
16 all of the intake users on the reservoir itself to be
17 prepared to take steps now to move their intakes down
18 to elevation 650 in case we had to lower the lake
19 again, we wanted the intake users to be serviceable.

20 This is where the State of Kentucky
21 has stepped forward, provided some funds for those
22 folks that they can do an emergency repair and lower
23 their intakes. I can assure you I could go on.

24 One of the things that we did do,
25 there are impacts to almost every project purpose at
1 wolf Creek from the lowering of this lake. 235

2 Hydropower, water supply, water quality, fish and
3 wildlife, recreation.

4 Navigation is not a project purpose at
5 Cumberland, but 60 percent of the flow past New
6 Orleans in a dry summer comes from Lake Cumberland,
7 60 percent of water flowing down the Mississippi to
8 New Orleans comes from Lake Cumberland in a regular
9 year. We have cut that off. So we have had impacts

10 to all of our project purposes.

11 One thing that we believe we're going
12 to be able to do, in January when we finish that
13 first grout curtain is we're going to be able to
14 modify the lake level. We intend to raise it some
15 increment, maybe perhaps up to 10 feet, haven't made
16 that determination yet. We have a process in place
17 to make that determination.

18 What we are attempting to do with that
19 is recapture some of the project benefits. We
20 haven't generated a lick of electricity out of Wolf
21 Creek since about June. We have 28 generators on the
22 Cumberland River, three of them were serviceable last
23 month, two of them are serviceable this month. We
24 have had to work with everybody to compensate for our
25 lack of generating capability.

236

1 So this water that we may be able to
2 capture next year, we're going to be able to go back
3 into somewhat of a water management regime and
4 utilize that extra space, again, modifying what we're
5 doing at other projects to build up a little supply,
6 but the Cumberland system in a whole, Wolf Creek and
7 the drought are just kind of the perfect storm at
8 this point in time.

9 And I won't bore you, but we're about
10 to do the same thing at Center Hill. So our second
11 project that was built on a karst foundation, Center
12 Hill, we're beginning the dam safety repair at Center
13 Hill. We have begun some of the work. The grouting
14 work, we anticipate having a grouting contract in
15 place in about three more months.

16 And the same scenario, although the
 17 lowered lake level won't be as dramatic at Center
 18 Hill, but we're going to be doing the same
 19 communication plan, the same mitigation efforts, but
 20 that will compound our issues on water management on
 21 the Cumberland River as you well know. So we have
 22 both of those issues running at this point in time.

23 I have probably gone over, but I do
 24 appreciate the opportunity to talk to you about Wolf
 25 Creek.

1 COUNCIL CHAIR MR. TOM LITTLEPAGE: ²³⁷Any
 2 questions for Mike regarding his presentation?

3 Yes, sir, Glen.

4 MR. GLEN BIBBINS: A quick one.
 5 What's the thickness of your new cutoff wall?

6 MR. MIKE ENSCH: It will be between 3
 7 and 4 feet, depending on location, a lot of concrete,
 8 drilled kind of a secant construction, a circular
 9 pier tied together with a straight line. We will
 10 seek the good rock. It may not be 475, it may be
 11 450, it may go down further than that, but we're
 12 going to find good rock and put it to that.

13 COUNCIL CHAIR MR. TOM LITTLEPAGE: All
 14 right. Kenny?

15 MR. KENNETH DARNELL: When do you
 16 anticipate returning to a normal lake level?

17 MR. MIKE ENSCH: We're going to -- we
 18 have four critical points that we feel that we can
 19 reassess the lake level. One of them will be this
 20 January when we finish that upstream grout curtain.
 21 So this January we will make a determination about
 22 adjustment of lake levels. Potentially, and no

23 decision has been made, but potentially go to 690.

24 Next September, in September of '08,
25 we will -- we should finish the second grout curtain,
1 the downstream grout curtain, that will again be a ²³⁸
2 decision point. We may adjust after that point in
3 time.

4 Of course, if we make a decision in
5 September, we're probably not going to catch water
6 until December, January, maybe even the February
7 area, but that will be a decision.

8 The third critical point will be
9 construction of the wall itself in the two critical
10 areas. I don't have a good time line on that, but
11 potentially January of '09, and then the last
12 critical piece will become completion of the wall.

13 So given how the contractors propose
14 to build the wall, we projected a seven-year time
15 line and we're a year into that. Hopefully, we will
16 be able to come back some and we're hoping something
17 like five years.

18 MR. KENNETH DARNELL: This has been a
19 big thing in Kentucky because we have a state park,
20 the Cumberland State Park there, Burnside Island,
21 Somerset, and the State of Kentucky has sent out a
22 newsletter. If you're signed up on the state
23 government web site, they send out a newsletter every
24 week with an update about this.

25 It also looks like you have been ²³⁹
1 proactive with notifying municipal water systems to
2 lower their intakes, which is something that may come
3 out of this drought thing would be a proactive

measure.

MR. MIKE ENSCH: It could well be. It could well be. And I just encourage the public affairs folks to consider if you notify your intake users that they may want to take their intakes down, that will generate some interest because, oh, they are dropping the lake and going to this level, no, we're not, but that was the way it was -- originally that's where the 650 flurry came from.

MR. KENNETH DARNELL: Was this thing in imminent danger of collapsing?

MR. MIKE ENSCH: I will tell you that my professional judgment is that it was not. It is in a state of failure. It is -- we are losing material, we know that. Imminent collapse, no. No.

I will also say that the dam, every bit of grout that goes in, every piece of work we're doing on it, the dam is getting better each and every day.

The wet spots that I had noted where we hadn't been able to mow for years, literally years down below the dam, are essentially gone. A bit of that can be attributed to the drought, not everything. Most of it can be attributed, I believe, to the lower lake level.

Piezometers are steady and they're improving. Settlement on the structure has stopped. The signs are indicative that things are stable, at the very least, if not improving.

COUNCIL CHAIR MR. TOM LITTLEPAGE: All right. George?

MR. GEORGE KITCHENS: Just a real
Page 190

11 quick one, Mike.

12 MR. MIKE ENSCH: Yes, sir.

13 MR. GEORGE KITCHENS: Is DCI the
14 ongoing contractor for the entire remediation project
15 or just the boat landing?

16 MR. MIKE ENSCH: They are a sub for
17 part of the other work.

18 MR. GEORGE KITCHENS: Okay.

19 COUNCIL CHAIR MR. TOM LITTLEPAGE: Any
20 other questions for Mike?

21 Thank you. We appreciate that update.

22 What I propose is maybe we take like a
23 five- or ten-minute break, no more than, stretch
24 break and then we will hear our last two
25 presentations and the introduction of the discussion
1 questions. 241

2 (Brief recess.)

3 COUNCIL CHAIR MR. TOM LITTLEPAGE: All
4 right. This what we call there is a light at the end
5 of the tunnel. We're at the tail end of this first
6 day. I know we've thrown a lot of information at
7 you.

8 Hopefully you have continued to look
9 at our discussion questions and are developing some
10 questions or commentaries for further discussion
11 tomorrow.

12 Our next speaker is Gene Gibson who
13 will be talking to us about another safe dam issue or
14 dam rehabilitation issue in Alabama on Bear Creek.

15 Gene.

16 MR. GENE GIBSON: Thank you, Tom. For

17 those of you who that may not be aware, Janet
18 recently reassigned me to serve as the project
19 manager for this Bear Creek project. I will serve as
20 the overall project manager for this.

21 So I will slowly be phasing out of
22 some of the work that I have been doing or
23 transitioning out some of the work that I have been
24 doing on water supply and drought management and
25 interbasin transfers and basically focusing most of
1 my energy for the next couple of years on completing²⁴²
2 this Bear Creek Dam rehabilitation project.

3 I think it was a good move to put Mike
4 ahead of me because the situation that they are
5 talking about on Wolf Creek is very, very similar to
6 what this particular project is, except on a much,
7 much smaller scale. So his presentation was a
8 perfect introduction into the Bear Creek Dam
9 rehabilitation project.

10 It's actually -- Bear Creek Dam is
11 actually an earthen dam constructed on karst
12 limestone, just as you mentioned for Wolf Creek. In
13 this picture here you can sort of see that Bear Creek
14 Dam is right here in northwest Alabama in Franklin
15 County, and this is a picture of the actual earthen
16 dam there.

17 The purpose of this particular dam,
18 it's a non-power dam, so it doesn't generate any
19 electricity, but the primary purpose for the dam were
20 for water supply and for recreation and economic
21 development within the region.

22 And as Mike mentioned earlier, all
23 earthen dams leak, all dams leak actually. This one

24 was completed in 1969, and actually since 1969 it has
25 been leaking somewhat. We have noticed that there's
1 been increased leakage over time, which is not a good²⁴³
2 sign, and TVA has unsuccessfully attempted the
3 repairs on several occasions.

4 The most recent of these repair
5 efforts were in 2004 and 2005, but then again after
6 TVA refilled the reservoir to its normal summer pool
7 elevation of 576 feet the excess of leakage
8 continued. Therefore, TVA's attempted fix was not
9 successful.

10 A lot of the work we were doing was
11 trying to put in grout to detect where the voids were
12 in that karst foundation and fill that with grout.
13 We were putting in grout, putting in grout, putting
14 in grout, and obviously we were not getting to the
15 right space or problem because the water continued
16 through the dam and we were getting sinkholes
17 downstream, as well as measuring an excess amount of
18 leakage through the dam.

19 So since that time TVA has operated
20 the reservoir -- we have lowered the reservoir by 8
21 feet. We lowered it down to the point to where the
22 leakage has sort of subsided, if you will. So we
23 lowered it down 8 feet. We have been maintaining it
24 there as a precautionary measure to reduce the
25 leakage and provide a greater margin for flood²⁴⁴
1 management. So we actually took a similar approach
2 to what was taken on Wolf Creek by the Corps, but
3 again, obviously on a much smaller scale.

4 However, to the people in northwest

5 Alabama the Bear Creek Dam to them is probably just
6 as important, even though it's a small dam, as the
7 Wolf Creek Dam is to the people around Nashville and
8 so forth. So it was a very sensitive issue within
9 that local community.

10 The point though that we wanted to
11 make was even though we lowered it 8 feet during the
12 periods of heavy rainfall, the reservoir can rise and
13 the risk of dam failure continues to increase. So in
14 that particular area with that reservoir, a few
15 inches of rain could cause that 8 feet to pop back up
16 and start spilling water.

17 So the actions that TVA took obviously
18 was first to ensure the safety of the dam, including
19 doing additional sub-surface investigation. So we
20 undertook that. We actually put materials on site
21 should additional sinkholes appear, and that sort of
22 thing, so that we could take emergency action.

23 We established communications with the
24 local emergency management folks, and all of that.
25 If the water level gets up above a certain level,
1 then we have someone out there constantly monitoring²⁴⁵
2 the dam for dam safety purposes.

3 The second thing that we did was we
4 actually completed an Environmental Impact Statement
5 to evaluate the alternatives to find a long-term
6 solution to this leakage problem, and finally we
7 designed and implemented or are going to implement
8 this rehabilitation project.

9 I might point out that all of this was
10 done with the review and concurrence by an
11 independent Dam Safety Review Board, which is a panel

12 of renown dam safety engineers and specialists
13 throughout the country that provided oversight and
14 support to TVA to ensure that what we're doing is the
15 best technical solution.

16 So as I mentioned, we did additional
17 site investigation work. We found that -- we did
18 find that soft zones were found from 1 to 8 feet
19 above the bedrock and the native soil zone there
20 under the dam. There were no soft zones or voids
21 found in the embankment material itself, and the data
22 indicated a zone of permeable soil conditions that
23 appear responsible for the majority of the leakage.

24 So, again, it was the same sort of
25 thing that you're seeing on Wolf Creek, if you 246
1 remember those pictures where he was talking about
2 the water leaking through and then you see some muddy
3 water coming out on the downstream side, that's
4 exactly sort of what was happening on Bear Creek.

5 However, the dam safety specialists,
6 and so forth, concluded that although there were no
7 guarantees, the data did not indicate the dam was in
8 any imminent danger of failure. I already mentioned
9 that we were increasing the monitoring coordination
10 and so forth.

11 So the process that we actually went
12 through in terms of the Environmental Impact
13 Statement, we actually started the -- had the public
14 scoping meeting last June, June of last year, and the
15 EIS was released -- a draft EIS was issued this June,
16 about 11 or 12 months later.

17 Then we had a public meeting this past

18 summer to discuss the draft EIS. Then the final EIS
19 was released August 10th, and the record of decision
20 was signed about a month ago.

21 I will just mention here that the
22 public scoping meeting that was held a year plus ago
23 for the local interest, the issues of primary concern
24 to the participants in that local area of the public
25 scoping meeting that was held back in June of '06 was
1 that if -- the primary concern was flood control, to²⁴⁷
2 make sure that nothing happens to lose my flood
3 control and put me at additional flood risk.

4 The second one was the economic impact
5 of potentially losing the dam. The third was water
6 supply, and finally recreation. You can sort of see
7 the breakdown of the types of issues that -- from the
8 250 comments that we received. And as you can see,
9 about 90 percent favored either repairing or
10 rebuilding that particular dam.

11 The alternatives in the EIS consists
12 basically of four alternatives. The first one was,
13 hey, just live with what we have got, take no action.
14 Obviously, that one did not meet dam safety
15 requirements.

16 The second was to modify the dam to
17 maintain a summer pool elevation of 576, that was do
18 whatever we needed to do to get the dam back to the
19 way it was originally designed.

20 The third one was, well, why don't we
21 just lower the dam and maintain the summer pool
22 elevation at 565, which was about 11 feet below. So
23 just lower the dam where it doesn't seem to be
24 leaking so much, would that be cheaper for us to do

25 that and just have a lower head dam. 248

1 And then finally the last option we
2 looked at was removing the dam and restoring the
3 former -- just going back to the former creek
4 channel.

5 The more we got into this, as it turns
6 out, obviously option one was not feasible because of
7 the dam safety implications that would remain. As it
8 turned out, interestingly enough, alternatives two
9 through four turned out to be very financially
10 comparable when considering all aspects of the
11 construction and mitigation for having the water
12 level at the lower level or going back to the creek
13 level.

14 A lot of the remediation-type work
15 with the shoreline, as well as archeological surveys
16 that would have to be done, it runs into millions and
17 millions of dollars to be able to do that, remediate
18 that effort. So alternatives three and four were
19 basically ruled out.

20 That sort of left us with the
21 alternative two, which was to modify the dam as
22 originally stated. So the preferred alternative came
23 out in the EIS was to modify the dam and restore the
24 original operating pool.

25 what we're proposing to do is 249
1 construct a roll of compacted concrete berm at the
2 toe of the existing dam. This is a roll of compacted
3 concrete structure which will prevent a dam failure.
4 Even if there is a tricky foundation condition which
5 allows the water to flow out from under the structure

6 or in the future if there is a karst leak that
7 reappears with this new structure that we're putting
8 in place, it's not like soil that would be -- sort of
9 turn muddy and come away through sinkholes, and so
10 forth. We're actually putting in a dam structure
11 there, a concrete compacted structure so that even if
12 the there is leakage there it won't erode away the
13 concrete berm.

14 So what we have done, actually this
15 week they had the groundbreaking down there at Bear
16 Creek, which was attended by our present and CEO,
17 Mr. Kilgore, Congressman Aderholt, and others to kind
18 of kick this project off.

19 We have retained Paul Russo &
20 Associates as the design engineer. As I have
21 indicated, we have already conducted quite a bit of
22 field investigation and work for the foundation
23 design and the roll of compacted berm. We began site
24 preparation and construction this past September.
25 The water cutoff below the foundation is planned for
1 December, and the project completion is scheduled for²⁵⁰
2 June of 2009.

3 So with that I will be happy to answer
4 any questions. I have only been with the project a
5 short period of time and I might not be able to
6 answer too many questions, but I will be happy to
7 answer what I can.

8 COUNCIL CHAIR MR. TOM LITTLEPAGE: All
9 right. Russell?

10 MR. RUSSELL TOWNSEND: When the
11 repairs began in earnest, how will the pool level be
12 lowered, I guess, compared to like a low pool or a

13 winter pool level? Will the water be somewhat lower
14 or significantly lower, none lower?

15 MR. GENE GIBSON: No. I think the
16 actual approach is when they are going to be cleaning
17 off the downstream to -- the actual construction work
18 is downstream the existing dam. So the water level
19 is already down.

20 what they will be doing is taking off
21 that overburden of soil and removing that and pumping
22 out all of the water that's down below and putting in
23 this cutoff trench and cutoff wall, and so forth. So
24 hopefully on the upstream side we're not going to be
25 seeing it any lower than what it currently is.

1 The bigger concern is if we have a big²⁵¹
2 rain event which would cause it to pop up and flood
3 the work we're doing downstream.

4 COUNCIL CHAIR MR. TOM LITTLEPAGE: All
5 right. Bruce.

6 MR. BRUCE SHUPP: Just one quick
7 question. What's the targeted contract amount for
8 this?

9 MR. GENE GIBSON: \$35 million is what
10 we have budgeted, and that's my job to bring it in
11 under \$35 million.

12 COUNCIL CHAIR MR. TOM LITTLEPAGE: Or
13 we're going to break your ankles.

14 MR. GENE GIBSON: Or break my other
15 ankle.

16 COUNCIL CHAIR MR. TOM LITTLEPAGE: Any
17 other questions for Gene?

18 Russell?

19 MR. RUSSELL TOWNSEND: I've got one
20 more. I'm sorry. I don't want to seem like a
21 one-trick pony, but y'all asked me to be here for my
22 one trick. Here I go.

23 what cultural resource surveys have
24 been done downstream?

25 I should know that because I probably²⁵²
1 reviewed this project, or at least Tyler Howe in my
2 office did, but what did -- what is TVA doing to
3 protect those resources?

4 MR. GENE GIBSON: We have actually --
5 yeah, I have got the answer, too, I think.

6 MS. BRIDGETTE ELLIS: Go for it.

7 MR. GENE GIBSON: What we did is all
8 the construction areas have actually been surveyed
9 for archeological aspects and have been cleared for
10 construction.

11 The actual reservoir reading for the
12 winter pool, we have a Memo of Agreement with the
13 Alabama SHPO for increased patrols. TVA police will
14 be doing increased patrol so that if we find any
15 archeological resources while they are doing the
16 survey and doing riprap they will be providing
17 physical protection for those resources. So that is
18 underway.

19 MR. RUSSELL TOWNSEND: Okay.

20 COUNCIL CHAIR MR. TOM LITTLEPAGE: Any
21 thing you want to add? Okay. Any other questions?

22 Gene, thank you very much. We
23 appreciate that update. We wish you luck in that
24 endeavor.

25 Our next and final speaker, with the
Page 200

1 exception of our --

2 MS. BRIDGETTE ELLIS: Will be short.

3 COUNCIL CHAIR MR. TOM LITTLEPAGE: --

4 good friend Dave, Bridgette Ellis is going to talk to
5 us on stewardship organizations.

6 MS. BRIDGETTE ELLIS: This is very
7 short. Several people have asked me about
8 organization and about specific people. So I thought
9 I would give you kind of the update of the
10 organizations that perform all the stewardship
11 functions now.

12 If you'll remember, we have got a new
13 CEO, Tom Kilgore. Well, just recently we also got a
14 new Chief Operating Officer, Bill McCollum, and Bill
15 comes to us from Duke.

16 When he came in from Duke he said,
17 "Really what I want in the operating organizations
18 are those programs and those functions that are power
19 generation, fuels, transmission, and all of those
20 different types of things."

21 So the organization that had river
22 operations and stewardship, and all of those things,
23 needed to be split apart. So Janet's organization,
24 now River Operations, has moved into the COO
25 organization.

1 Then there was a new organization put²⁵⁴
2 together, which is the Office of Environment and
3 Research that I now am over. In that we have, of
4 course, the stewardship functions, environmental
5 policy. We also have research and development for
6 that.

7 You heard from Anda Ray this morning,
8 she took over my job as vice president of the
9 environmental stewardship job when I took this.

10 A lot of people are wondering, you
11 know, where is Kate Jackson? A lot of the things
12 she's doing now are special projects for Mr. Kilgore,
13 our CEO. What she did first is she worked on two
14 different special projects.

15 If you will remember, in our strategic
16 plan we have energy efficiency goals and commitments,
17 and we also have renewable energy and what will we do
18 to reduce our carbon footprint, and those types of
19 things?

20 So what she's doing is working on
21 those special projects and how they link back to the
22 strategic plan. So she got those going and kind of
23 did the background and the strategy for how we needed
24 to implement that, and now those are being handed off
25 to the organizations that are going to have the
1 ultimate responsibility for them. 255

2 So for like energy efficiency, the
3 Customer Resources Group in TVA, which works directly
4 with our distributors, they will have that lead for
5 energy efficiency because energy efficiency has to
6 happen at the end use.

7 Then also the renewable strategy will
8 then be housed in my organization, and we will work
9 through a strategy for renewable energy and how will
10 that work in the future and how will we need to be
11 looking at that from a strategy standpoint moving
12 forward. Kate will continue to work on special
13 projects for Mr. Kilgore.

14 So that's it. Any questions?

15 See, I told you it would be short.

16 COUNCIL CHAIR MR. TOM LITTLEPAGE: All

17 right. Thank you for that update. We appreciate
18 that.

19 Mr. Facilitator.

20 FACILITATOR MR. DAVE WAHUS: I would
21 like to ask you to turn in your book to the
22 discussion questions tab. Now, I am not going to
23 read these three questions to you because I know
24 you-all can read, but I want to draw your attention
25 to these questions.

256

1 We're going to deal with these
2 questions one at a time tomorrow morning. We will
3 start tomorrow -- we will be starting at 8:30 again
4 tomorrow morning.

5 We're going to be dealing with these
6 questions and asking for your input on each of these.
7 We will do them one at a time in turn, and then we
8 will have some discussion for them.

9 We will not ask you to finalize your
10 recommendation until the public has had the
11 opportunity to provide input so that you can consider
12 that public input as well in making your final
13 decisions, and then hopefully we will -- you will be
14 able to come to some conclusion and recommendation
15 before noon so that we can -- I can turn the program
16 back to your Chairman.

17 Does anyone have any questions?

18 I will give you some detail. The
19 first thing in the morning when we start out I will

20 explain the detailed process that we're going to do.
21 It's not very complex. For those of you who have
22 been here before, it's going to be very similar to
23 what we have done before.

24 Please put some thoughts into it and
25 make some notes that you have in response to any of
1 these questions tonight, and that will help 257
2 facilitate the movement and we can move along smartly
3 in the morning.

4 we have only got about two, two and a
5 half hours scheduled to do this, but I think it can
6 be done without any problem.

7 Any questions on the questions?

8 Two other administrative things. If
9 you would, please take off your name tag now and put
10 it on the table, that way you will have it for
11 tomorrow and you won't forget it in the hotel. If
12 you have two name tags, you can put both of them
13 on -- the second name tag, if you're wearing a TVA
14 visitor name tag, you can leave that on the table as
15 well and that will be turned in.

16 The other announcement is if you're
17 joining the TVA for dinner tonight, please meet in
18 the lobby of the hotel at 5:45 and further directions
19 or assistance to get to the restaurant will be
20 offered at that time by TVA staff.

21 COUNCIL CHAIR MR. TOM LITTLEPAGE: Do
22 we have a count of who is coming tonight? Is
23 everybody available?

24 FACILITATOR MR. DAVE WAHUS: Has
25 anybody changed their mind from what they sent in
1 earlier? 258

2 Is there anything else that we need to
3 address?

4 In checking out tomorrow, if you're
5 departing the hotel tomorrow, I would suggest that
6 you check out before 8:30 and move your luggage to
7 your car and that will offer you a quick getaway
8 after we conclude.

9 There will be box lunches provided. I
10 believe checkout is 11:00, and we may not be out of
11 here by 11:00. So that would be -- that could be a
12 conflict for you. If you're staying tomorrow night,
13 obviously don't check out.

14 Any questions about any of that
15 process?

16 COUNCIL CHAIR MR. TOM LITTLEPAGE: All
17 right. 5:45 in the lobby without -- unless anybody
18 else has anything else, we will adjourn until
19 tomorrow morning.

20 END OF FIRST DAY

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25